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MARKETING

Soybean Oil

Soybeans

And Soybean Meal



in Cyprus, Lebanon, and Malta.

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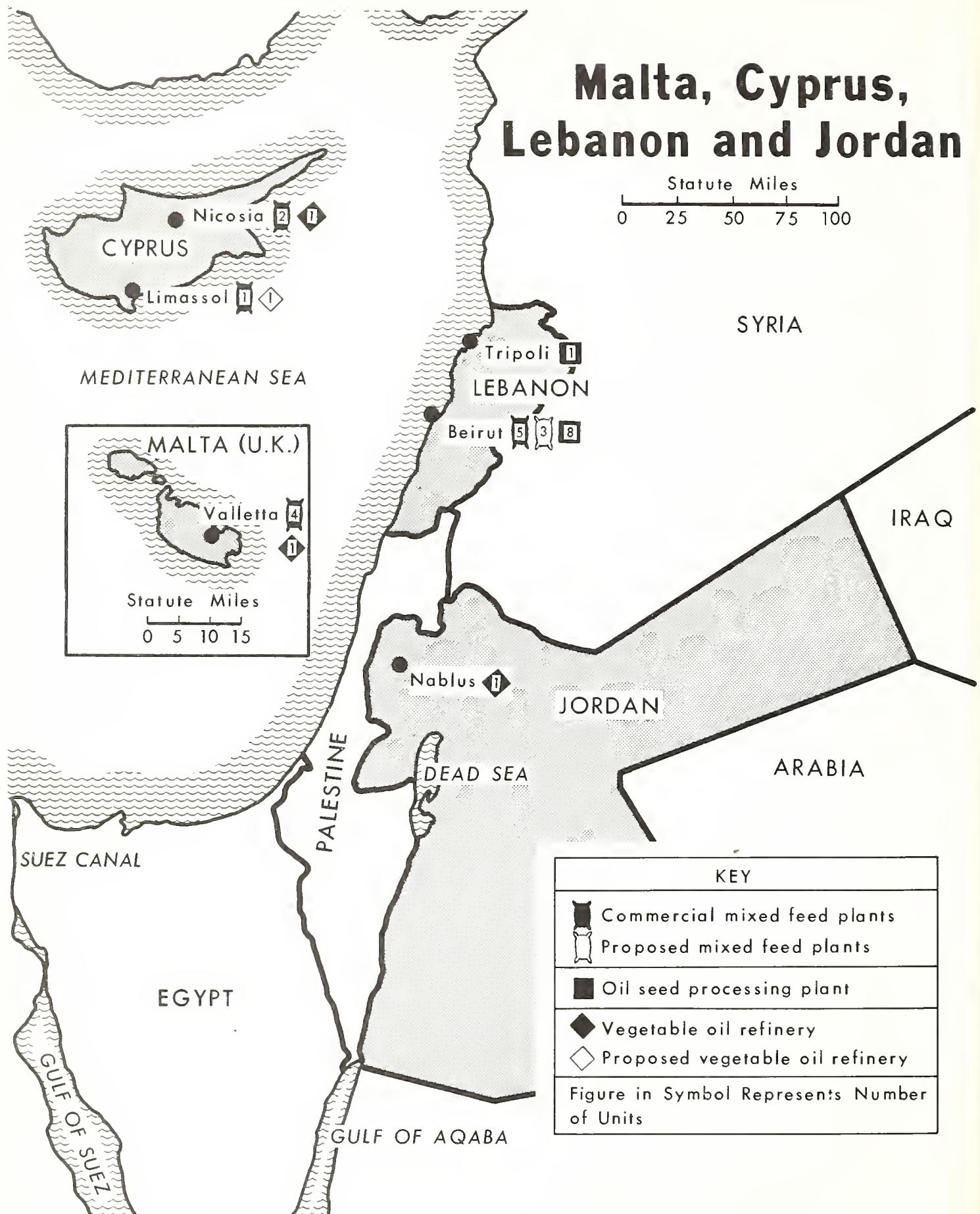
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FOREWORD

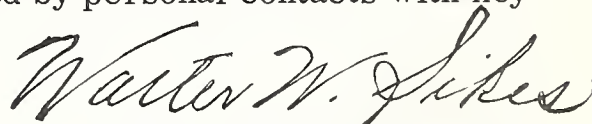
In the late 1950's, many nations formerly dependent on the United States for a large share of sorely needed direct assistance and economic aid made near-phenomenal strides in both business and agriculture. Japan and industrial countries of Western Europe are good examples of these nations which have moved from "aid" to "trade" status. Yet, economic progress in these countries came about with little fanfare and scant notice. With economic improvement, these countries became, and continue to be, good-to-excellent dollar markets for U.S.-produced agricultural commodities, both raw and processed. Soybeans and soybean products shared in, and are a prominent part of, this prosperity.

Concurrently, the soybean industry of the United States established a promotional organization called the Soybean Council of America, Inc. This organization has been pressing hard on a world-wide basis for increased use of soybeans and the oil and protein fractions of the processed soybean. It does not seek to displace any oilseed or oil-source material normal to the countries where it is promoting markets for U.S. soybeans and soybean products. Rather, it is seeking increased consumption of all fats, oils, and proteins. The result of such a campaign has been to materially step up exports of U.S. soybeans and soybean products to accustomed user-countries and to sell soybeans and oil and meal in entirely new markets.

Thus, the 1960's appear to be the time for a comprehensive, intensive review of markets in countries where opportunities appear to exist—or seem imminent—for new business or expanded trade between U.S. firms and their counterparts (or foreign government agencies). That is why, in late 1960, the Foreign Agricultural Service began this review. Previous reports have covered Pakistan, Iran, Egypt and Syria, Greece, Turkey, Japan, and Southeast Asia.

The primary intent of this series is to provide the U.S. vegetable oilseeds and oilseed products industry with information upon which it can make intelligent decisions as to possibilities, and degree of participation or activity, in a given market.

In the present review, and the others to come, basic market data concerning all aspects of oilseeds and oilseed products were obtained by personal contacts with key sources.



Walter W. Sikes, Director
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ACKNOWLEDGMENT

The author is grateful for the cooperation and assistance of the many importers, dealers, and processors of oilseeds and fats and oils in Malta, Cyprus, and Lebanon. Representatives of the various host governments also made significant contributions to this report.

The staffs of the American Consulate in Malta and of the U.S. Embassy in Nicosia, Cyprus, and Beirut, Lebanon, made invaluable contributions. Highly important contributions were made by John Miles, American Consul, Valletta, Malta; John MacCaskill, Economic Officer, U.S. Embassy, Nicosia, Cyprus; John C. Papodopoulos, Chief, Livestock Department, Ministry of Agriculture, Cyprus; and Michel Bekhash, Agricultural Specialist, U.S. Embassy, Beirut, Lebanon.

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MARKETING SOYBEAN OIL, SOYBEANS, AND SOYBEAN MEAL IN CYPRUS, LEBANON, AND MALTA

By George E. Wanamaker
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INTRODUCTION

Together, Cyprus, Lebanon, and Malta represent an import market for \$10 million worth of soybeans and soybean products. In addition, the currency of these areas is, in general, freely convertible.

Malta, an area within the British Commonwealth, has recently been provided a considerable degree of latitude in the use of foreign currency reserves. Cyprus, which became an independent nation in late 1960, is now free to purchase in the market where price and shipping conditions are most favorable. Lebanon is known as a free-currency market, permitting the transferability of foreign exchange without limitation.

The general economy of Malta and Cyprus is closely tied to military and naval expenditures of the United Kingdom. Until 1962, these expenditures have been substantial and have enabled the areas to build up adequate foreign exchange reserves. There is evidence, however, that the announced decline in future military expenditures of the United Kingdom in Cyprus may lead to a deterioration of that country's foreign exchange position. Malta enjoys a favorable foreign exchange reserve position and, like Lebanon, may be expected to continue unlimited imports from hard currency areas.

Cyprus, Lebanon, and Malta — like other emerging areas of the Middle East — pose particular marketing problems for the U.S. soybean trade and industry. Buyers in these countries are frequently unfamiliar with the kinds of commodities available from the United States and the shipping terms under which they may be purchased.

Then, not only are import requirements of each area small in terms of U.S. commercial practices, but the imports, especially of soybean meal, are made by numerous small firms. In evaluating the potential of these markets, the American exporter will find it useful to fully explore the possibility of combining small purchase requests by area into a large commercial order. Unlike those in other areas of the Middle East, however, the larger mixed-feed plants and commercial poultry farms in Cyprus, Lebanon, and Malta have expressed a willingness to cooperate on measures that will facilitate the importation of soybean meal in bulk. Such cooperation is an important step in improving the U. S. competitive position in these markets.

Harbor facilities are still another problem. While Valletta, Malta, enjoys excellent harbor, port-handling, and bulk facilities for grains and vegetable oils, Cyprus and Lebanon do not. Depth limitations are particularly important in the Cypriot ports of Famagusta, Limassol, and Larnaca and a consideration in Beirut, Lebanon. For all three of its major ports, Cyprus has scheduled projects to vastly improve facilities and increase depth limitations. They are not to be completed, however, before 1964.

With the rapid development of the mixed-feed and poultry industries in these countries, the U. S. export potential is greatly improved. The economy of importing bulk feed ingredients for local milling or blending has been demonstrated. The United States is expected to obtain a larger share of this rapidly developing market for protein concentrates and feed grains.

In order to facilitate the current importation of soybeans and soybean meal at Beirut and Famagusta, importers are contracting for bulk grains and soybean meal for local bagging. This procedure is expected to result in a saving of \$8-\$10 a metric ton.

Cyprus, which is currently an importer of fully refined, deodorized oils, is investigating the economy of establishing a refining facility at Limassol. With the acceptability of soybean oil already well established, it is likely that the United States will be an important source of crude degummed soybean oil for the proposed refinery at Limassol. The United States is currently a supplier for the soybean oil refinery in Malta.

The role of the United States as a supplier for materials needed in this market will depend upon the ability of the American trade and industry to adjust to these conditions in this market.



More and more well-managed commercial poultry farms, like the one pictured here, are to be found in Cyprus and Lebanon. On such farms, both mash and pellet feeds are commonly used.

SUMMARY

Cyprus, Malta, and Lebanon and other developing areas of the Mediterranean are expanding free currency markets for U. S. soybean oil, soybeans, soybean meal, and protein concentrates in the form of pre-mixes.

For soybean oil, these areas can be developed into a sizable market for the United States as their purchases exceeded 4,000 tons in 1961, and opportunities exist for increasing sale to 10,000 - 15,000 tons.

Exports of soybeans to these areas are expected to be initiated in 1962, and may climb to 15,000 or 20,000 tons.

As for soybean meal, these area's purchases now total about 3,000 tons, and opportunities exist for 20,000 tons. Protein-concentrate purchases now exceed 15,000 tons annually.

The U. S. competitive position in these areas has increased markedly in recent months. Malta and Cyprus are enjoying greater latitude in purchasing outside the sterling bloc. Cyprus, an importer of 9,000 tons of fully refined, deodorized vegetable oils, has sharply increased the importation of soybean oil. If processing facilities are established in Limassol, Cyprus is expected to import substantial quantities of crude degummed soybean oil for local refining. Malta now processes only imported, crude, degummed soybean oil, including a portion from the United States. Lebanon and Cyprus are beginning to purchase in bulk soybean meal for local bagging. All these factors favor the U. S. exporter.

The U. S. market for soybeans in Cyprus and Lebanon will depend on the profit margins for machinery basically designed and operating on cottonseed and safflower. Preliminary investigations of cost data at the pre-press solvent plant in Nicosia appear favorable for processing imported soybeans. Similar studies are currently underway in Lebanon, where margins are reported to be less favorable than for cottonseed.

CYPRUS

Summary

Cyprus is likely to become a market for U. S. soybeans and soybean products in 1962. Initial imports from the United States may be expected to be 1,000 tons of soybean meal and, on an experimental basis, 1,000 tons of soybeans. Currently, Cyprus is importing with free exchange over 9,000 tons of fully refined vegetable oils, 7,000 tons of oilmeal and cake, and 3,000 tons of protein concentrates in the form of pre-mixes for feeds.

The financial position of Cyprus has failed to improve in recent years, and steps are being taken to help reduce the trade deficit, which include, freer licensing and lower tariff rates for imports from nonsterling areas to permit buying in the most favorable markets. Cyprus now appears to be enjoying a far greater latitude in selecting trading partners, a trend which is improving the competitive position of the United States and inviting bilateral and barter agreements from the Soviet Bloc. U. S. soybeans and soybean meal can now be imported freely into Cyprus, but vegetable oils are still subject to discriminatory import duties.

There is every indication that U. S. soybean meal can be economically imported directly into Cyprus in bulk for local bagging and transport to feed plants and poultry farms. Soybean meal requirements of the mixed feed industry are expected to exceed 7,500 tons, and total annual feeding requirements may approximate 10,000 tons of soybean meal by 1964-65.

Representatives of an idle pre-press solvent plant in Nicosia designed for safflower seed are currently studying the economy of importing soybeans for processing. Imports of 5,000 to 10,000 tons of soybeans would satisfy domestic requirements for meal, and 10 percent to 15 percent of the country's requirements for vegetable oils.

As port facilities are improved, in line with the Five Year Plan, Cyprus may be expected to establish bulk handling and refining facilities for crude degummed vegetable oil. This development appears unlikely before 1964.

Cyprus is a market for 200 to 250 tons of inedible U. S. prime tallow in used drums. Lots of 50 tons are generally maximum.

General Characteristics

Cyprus on August 16, 1960, became the largest independently governed island in the Mediterranean. It is 40 miles west of Syria and 60 miles south of Turkey. Its 3,572 square miles support a population estimated at about 575,000 (January 1962) or nearly 170 persons per square mile. Population is increasing at a rate of about 1.5 percent annually, and is expected to exceed 600,000 by 1965.

Agriculture is the most important activity in Cyprus, engaging about 50 percent of the total population but contributing less than 25 percent of the gross national product. Per capita income of persons engaged in agriculture has been estimated at somewhat less than \$200 compared to about \$500 in the nonagricultural labor force and \$380 for a national average.

The economy of Cyprus appears to be in a period of adjustment. The boom which began in 1950 came to a halt in 1958-59. Since construction activities were an important part of the boom, their near-termination in 1957 aggravated an already-difficult unemployment situation. The period 1957 to 1961 included a severe 4-year drought, a sharp decline in farm and national income and price, increased unemployment, a heavy capital outflow, and a reduction in credit and money in circulation. The foreign and internal debt continued to rise, while tourism declined owing to the hazards of travel during the pre-independence period.

The outlook for Cyprus in 1962-65 is mixed for the three most important sectors of the economy—agriculture, tourism, and income from foreign bases and related services. In 1962, after 4 years of prolonged drought, agriculture enjoys an exceptionally prosperous year. There is some indication of rising tourism, which may continue through 1965. While competition for tourist revenues is keen, Cyprus has set a goal to achieve an annual level of 50,000 to 60,000, the same as in 1954 but three times the 1955-59 average. The United Kingdom military expenditures on a new air force program initiated in 1960 came into full swing in 1961, but was cut back in early 1962. Income from mining may decline after the mid-1960's.

Imports of food and feed products have continued to increase and now provide about 40 percent of consumption requirements. Per capita income, which at current prices increased at about 10 percent per annum 1950-57 or 5 percent per annum based on constant prices, can be expected to increase at an average rate of 4.2 percent through 1961 and reach \$490 by 1966. Based on the experience of income elasticity in similar countries, each 1.0 percent increase in per capita income will result in 0.7 percent increase in food consumption; the demand for meat, milk, poultry products, and vegetable oils is likely to increase faster than the demand for food in general and after adjustment for population factors, should increase by 20 percent by 1965 over the 1960-61 period.

Cyprus, a Commonwealth country, is a member of the United Nations. West Germany has given financial assistance; the United Kingdom is granting funds through 1965; and the World Bank is surveying the possibilities of financing various schemes. In 1961, Cyprus and the USSR signed a bilateral trade agreement, and Cyprus signed a technical assistance agreement with the United States.

Sources of Supply

Oilseeds

The trend in domestic oilseed production has been sharply downward in recent years.^{1/} Cottonseed production, maintained at about 1,000 metric tons in the period 1950 to 1955, began a sharp decline in 1956 and production in recent years has been negligible. Flax and hempseed production has paralleled the trend in cottonseed, and production is less than 100 tons.

As for imports of oilseeds, they have declined from a 1957 peak of 4,772 tons to only 1,495 tons in 1961. Cottonseed, previously the most important type of oilseed imported, primarily from Syria and the Sudan, was not imported in 1960 or 1961.

Table 1.--Cyprus: Imports of oil-bearing materials, 1956-61

Type	1956	1957	1958	1959	1960	1961	Primary source
	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	
Peanuts, shelled.....	246	1,048	323	489	279	800	Egypt, Sudan, Lebanon
Cottonseed.....	2,128	3,118	3,242	115	—	—	Sudan, Syria
Sesameseed.....	509	303	489	759	403	680	Iraq, Lebanon
Other.....	247	303	—	28	13	15	Lebanon
Total.....	3,130	4,772	4,054	1,391	695	1,495	
Oilcake and meal, n.e.c. ^{1/}	1,995	1,122	3,039	6,347	5,753	7,500	^{2/} Lebanon, Israel, Syria

Fats and Oils Division

^{1/} While official data provide no further breakdown, these data probably include cottonseed cake and meal, soybean meal imported directly, and peanut cake.

^{2/} Excludes 3,500 tons of protein concentrates imported as pre-mixes. These may contain between 40% and 60% soybean meal; fish, meat or bone meal, etc. The United Kingdom is a major supplier.

Oilmeal and Cake

Domestic oilseeds make only an insignificant contribution to the supply of oilcake. With the decline in domestic seeds for processing and an increased demand for live-stock feeding, oilcake and meal imports were sharply increased, and in 1961 approximated 7,500 tons, compared to only 1,122 tons in 1957.^{2/} Lebanese, Syrian, and

^{1/} Excluding olives.

^{2/} No breakdown of these data are available.

Turkish cottonseed cake and Israeli soybean meal are important in the import picture. Significantly, the meal equivalent of imported oilseeds and meal has been increasing more rapidly than domestic oilseed production has been declining, reflecting an increased availability of protein meal. Since livestock numbers except poultry have remained fairly constant, the additional availabilities indicate a somewhat better feeding ratio — carbohydrates to high-protein vegetable meal. Increased quantities of soybean meal will be needed to meet the expanding demand for mixed feeds.

Vegetable Oils

Olive oil is the major type of oil produced in Cyprus, with annual output varying within a range of 1,000 to 3,000 metric tons. Output of cottonseed, flaxseed, hempseed, and sesame oil is negligible. Peanut oil from imported seed probably amounted to less than 300 tons in the peak year 1961.

Table 2.--Cyprus: Imports of vegetable oils, by type, 1955-61

Type	1955	1956	1957	1958	1959	1960	1961 prelimi- nary	Primary source
	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	
Soybean.....	—	191	285	9	290	600	1,200	Israel, Belgium, Denmark
Cottonseed.....	1,819	998	306	329	—	—	—	Sudan, Lebanon, Mozambique
Peanut.....	1,506	2,129	733	2,953	2,066	1,526	2,200	Portugal, Israel, Netherlands, West Germany
Sunflower.....	—	—	5	33	1,354	2,641	2,700	Israel, West Germany, Netherlands
Rapeseed.....	15	330	353	440	1,187	1,000	645	W. Germany, Sweden
Olive.....	38	42	19	2	55	(¹ / ₂)	450	Greece and Lebanon
Coconut, edible.....	271	582	142	23	22	50	260	Belgium, Sweden, Malaya
Margarine, shortenings etc.....	629	808	1,029	931	1,029	1,354	1,480	U.K., Netherlands, Denmark
Other ² /.....	638 ² / ₁	1,282	694	306	296	601	500	Netherlands (corn) Israel (niger)
Total.....	4,916	6,362	3,566	5,026	6,299	7,772	9,435	

Fats and Oils Division; Customs data, Cyprus.

¹/Negligible. ²/Primarily nigerseed oil; also linseed and corn oils, fatty oils, etc.

Imports of vegetable oil play a primary role in supplying edible and industrial fats requirements for Cyprus. Import data, generally complete, indicate a clearly rising trend. The 4,900 ton figure of 1955 nearly doubled by 1961, when about 9,500 tons of oil were imported. In 1955, imported fats and oils represented over 80 per cent

of total availability; by 1961, imports accounted for over 90 per cent. In 1961-62, this figure probably declined somewhat, owing to the exceptional olive crop. However, the dependence of Cyprus on imported seed oils is well established.

A study of imported vegetable oils all fully refined, deodorized, and drummed by type and origin indicates some interesting changes. Cottonseed oil, the major category through 1955, has ceased to be imported.^{3/} Soybean oil imports are increasing rapidly. Imports of sunflower oil, primarily from Israel and Western Europe, began only in 1957 and ranked first by 1960 and 1961. Rapeseed oil imports appear to be rising, although they declined in 1961. Hardened cooking fats, always important in the total, have more than doubled in the period 1955 to 1960. All such imports originate in Western Europe.

Cyprus exports small quantities of solvent extracted olive oil, although the trend has been sharply downward; by 1960 only 30 tons was exported compared to a 1955-59 average of 330 tons. Edible olive oil exports are insignificant and average less than 50 tons annually. This oil is destined for Cypriot expatriates living in the United Kingdom.

Vegetable Oil Industry

One vegetable oil plant, formerly a part of the Hellenic Mining Company and presently owned by the Greek Community, is equipped to screw-press oilseeds and solvent extract the residual cake. The plant, located in Nicosia, has operated only infrequently on small amounts of cottonseed, safflower, and peanuts. Serious consideration is being given to reactivating the plant to process imported U. S. soybeans.

The plant is divided into two distinct units. One contains two screw presses with an estimated daily capacity of 25 tons each, at an oil content in the residual cake of 8 to 10 per cent. These high-speed presses are reportedly capable of reducing the oil content in the cake to about 3 per cent, but their daily capacity is correspondingly reduced. The Olier (French) solvent unit of a series of horizontal roles is of the batch type. Capacity probably exceeds 10,000 tons annually. The deodorizers, with a combined capacity of 12 to 15 tons daily, reportedly operate at up to 200°C. and 5-10 mm. of pressure. The equipment is currently being inspected by factory technicians to determine its condition and suitability for processing soybeans and other oilseeds.

Under consideration are plans for the bulk importation of U. S. soybeans, to be bagged in Famagusta harbor and trucked to the factory at Nicosia. There may also be some potential for the importation and local solvent processing of Turkish high-oil-content cottonseed cake. The capacity of the plant is adequate to meet the country's demand for oilcake and meal from imported oilseeds, but falls far short of being able to provide for the country's vegetable oil needs. Interest has been shown in the establishment of a refining plant to process imported crude vegetable oils in bulk, to relieve the heavy financial strain of importing the high current level of fully refined, deodorized vegetable oils in drums. No bulk or drumming facilities for vegetable oils exist in Cyprus. The importation of crude oil, in bulk, for local refining and drumming would enable a significant saving.

The United States is in an excellent position to provide Cyprus with soybeans for domestic processing but is at a competitive disadvantage under the current general import duty classification in supplying crude vegetable oils for processing. However,

^{3/} As is the case for cottonseed.

fully refined, deodorized vegetable oils can be imported from the United States on a freely competitive basis and suffer no duty discrimination.

Olive Oil Industry^{4/}

Olive oil mills operating in Cyprus can be roughly classified into two groups — primitive and modern.

The number of primitive mills, according to an estimate of the Ministry of Commerce and Industry, is about 1,000. Probably only a fraction operate each season. Each village of the olive growing areas has 1 to 5 of these primitive mills, and their total output, which is decreasing every year, ranges from 10 to 15 percent of the olive oil the country produces.

The mills are more than 50 years old — some more than a century — hand or animal operated, and often situated in the open air. The oldest mills are composed of a one-stone revolving mill and a metal screw press; the newer ones consist of a two-roller stone mill and a screw press with capstan.

Most of the modern olive oil processing equipment was introduced into Cyprus during the postwar years. The mechanically operated olive oil processing plants, including those established before the war, total about 150 of these, 16 belonging to cooperative enterprises and 17 to the church; the remainder are owned by private millers.

About 100 of these mills may be considered reasonably efficient; 50 are too old or incomplete or in bad condition of maintenance and cannot ensure economical use.

As far as processing capacity is concerned, the modern olive oil mills may be grouped as follows:

Group A:—Maximum daily working capacity. 3 tons of olives

Average duration of the processing season 80 days

Average seasonal output:

Olives. 150 tons

Oil. 30 tons

Group B:—Maximum daily working capacity. 1.8 tons of olives

Average duration of the processing season 50 days

Average seasonal output:

Olives. 60 tons

Oil. 12 tons

Both groups include an equal number of efficient plants; their total seasonal output is about 2,000 tons of oil, representing 25 percent or more of the country's average oil production.

^{4/} The Olive Oil Processing Industry - Report to the Government of Cyprus. Food and Agriculture Organization of the United Nations, Rome, 1961.

The modern olive oil processing mills are equipped with standardized equipment. Some oil is processed from boiled olives. This process is particularly popular in the Paphos district. This kind of oil, with a strong taste and a dark-green almost black color, is known as Mavrolado or black olive oil and it is widely used, blended with seed oil, to obtain a product which has the appearance and taste of virgin olive oil.

In addition to the olive oil mechanical pressing plants, Cyprus has five plants engaged in solvent extraction of olive (sulfur) oil from residues. This oil, extracted by solvents which include U.S. hexane, is refined by being subjected either to the single treatment of neutralization with alkalis or the double treatment of esterification and neutralization as well. The single method is generally limited to oils with comparatively low acidity — not exceeding 20 to 25 percent — and the double method, with oils ranging in acidity from 25 to 40 percent. With esterification free fatty oils are reduced to 3 percent and, by further neutralization, to 0.5 percent. The unrefined foots are used as soap stocks for low-grade laundry soaps produced in Cyprus.

Soap Industry

Only 2 of the 16 soap plants in Cyprus are currently operated. One of these located in Nicosia has a dominant position in the industry, producing a wide variety of household and toilet soaps for domestic consumption and export. Combined production of soap in Cyprus, expressed on a 60 percent fat content basis, probably approximates 400 to 500 tons, and is increasing at about 5 percent annually.

A variety of soap fats is used in Cyprus, including domestic sulfur oil, a relatively expensive product, imported tallow, which corresponds to U. S. prime bleachable (Titre 37-40), coconut oil, and some domestic animal fats. Soap stocks are imported in used drums of reconditioned quality. Annual requirements for imported tallow are estimated at 200 tons, in lots of 50 tons or less.

Cyprus imported in 1961 about 700 tons of synthetic detergents, nearly 150 tons of common laundry soaps, and over 300 tons of toilet soaps. Expressed in terms of soap, imports of synthetic detergents and soaps supply about 80 percent of cleansing materials used in Cyprus. Because of the competition from imported soaps, the quality of domestically produced toilet soaps appears excellent.

Livestock Economy

Cyprus has a well-diversified livestock economy, including a high proportion of animals and poultry well suited for commercial feeding. Official data on number of animal units by type are not available for recent years, except for pigs; thus the numbers have been estimated.

The poultry population is currently estimated at about 1,250,000, including 500,000 layers and 750,000 broiler chicks and replacement grower stocks. The estimated yearly production of broiler chicks for 1962 is about 1,500,000.

The pig population, which dropped very sharply to 19,828 in 1959 because of an outbreak of epidemic disease, is up again, and in 1961 was estimated at 34,500.

The cattle population until 1946 remained rather steady at about 40,000. With the exception of a limited number of dairy cows, these animals were of the native type used mainly for draft purposes. During 1948-59, in consequence of the mechanization of farming, the native cattle ceased to be of major importance, particularly in the plain

area. As a result, the average number of cattle during that period dropped to about 31,000.

In the last few years, however, the ox has given way to the cow, which is used as a dual-purpose animal — for draft purposes and beef production.

In the case of dairy cattle which number about 4,000, there is definite indication that the tendency is for a continuous increase.

The sheep population, estimated at over 450,000, has shown a rather steady increase, particularly in the last 10 years. In the case of goats, during the same period the tendency has been for a decrease in numbers which are reported at about 140,000. This decrease, however, was offset to some extent by the increased number of improved type of tethered goats kept. The number of tethered goats, at present, is estimated to be about 40 percent of the total goat population.

Mixed-Feed Industry

Cyprus has a well-developed continually expanding mixed feed industry. Five plants, concentrated in the Nicosia and Limassol area, produce an estimated 90 percent of the country's mixed feed output and all of the fully balanced livestock and poultry rations. Additional small hammer mill operations are scattered throughout the island.

Of the five large plants, four are privately owned. Two of these represent part of a complete, vertically integrated poultry operation. The two others, including one at



Mixed-feed plant, Limassol, Cyprus, which has an exceptionally fine poultry farm. One other plant in the country is also part of a complete, vertically integrated poultry operation.

Limassol, prepare and sell custom and formula mixed feeds. The fifth plant is a newly established (June 1961) mixed feed plant in Nicosia that is cooperatively owned, marketing its output through restricted outlets.

Output of the three large commercial mixed feed plants is conservatively estimated at 15,000 to 20,000 tons per year, or averaging between 500 and 650 tons monthly. The fully integrated private poultry feed plants probably produce an additional 5,000 to 10,000 tons of mixed feeds, while the remaining small hammer mills are estimated to produce an additional 5,000 tons. Total mixed feed output of Cyprus in 1961 probably exceeded 20,000 tons and, with the full operation of the cooperative mill completed in mid-1961, is expected to exceed 30,000 tons in 1962. Mixed feed output is expected to increase at a rate of 10 percent annually, and approximate 36,000 to 40,000 tons by 1965.

The large commercial mixed feed plants of Cyprus are characterized by generally modern European hammer mills, adequate covered storage area which exceeds 2,000 tons capacity per plant, or about 12 weeks supply, and universal difficulties in importing necessary quantities of high vegetable and animal proteins and yellow corn. The degree of mechanization of operations varies by plant from a fully automated unit at the newly established cooperative to intensive labor requirements for mixing and bagging in the other plants. Recently introduced pneumatic pumps are proving helpful in speeding up the mixing operations. Pelleting machines are in common use at all commercial mixed feed plants.

There has been a trend to shift the nature and source of vegetable proteins used in mixed feeds. Until recently feed manufacturers have favored the importation of completely pre-prepared concentrated high proteins. These pre-prepared mixes, generally of U.K. origin, included varying amounts of fish and meat meal, soybean meal, minerals, vitamins, and so forth. As the volume of mixed feed production in Cyprus increased, the cost of these pre-mixes invited attention to the economy of importing feed ingredients directly from source. Pre-prepared mixes appear to be more heavily weighted with fish meal protein than is common in the United States poultry industry.

While an estimated 80 percent of mixed feeds is consumed in poultry production, distribution varies markedly by area. The Limassol plant reportedly markets 90 percent of its output as poultry feed, including commercial poultry maintained by the feed plant; the two vertically integrated units produce only for poultry, mainly broilers, while the Nicosia cooperative plant markets 40 percent of its feed for cattle.

The current trend from importing fully prepared feed mixes to the basic raw materials is likely to greatly improve the U.S. competitive position in Cyprus. This trend — aided by improved mixing equipment, increased storage capacity at feed plants, the continuing awareness of the unfavorable taste and smell characteristics of poultry products finished off with fish meal concentrates — is creating an increased demand for soybean meal. The U.S. position as a supplier of soybean meal and yellow corn improved considerably in 1962, owing to restrictions on Israeli exports of soybean meal to Cyprus, duty free classification of soybean meal, the lifting of currency restrictions favoring sterling areas, the economy of importing soybean meal in bulk from the United States as part of general grain cargoes, and the bagging of such meal at Famagusta for shipment to the mixed feed plants in Nicosia and Limassol.

On the basis of 20 percent soybean meal in mixed feeds, import requirements of the balanced feed industry of Cyprus by 1965 are expected to range between 7,200 and 8,000 tons.

Feeds bear labels of carbohydrate, fat, protein, and crude fiber content; but the composition of the feeds is not published, and millers are free to substitute grains at will, so long as the general chemical composition is maintained. From the farmers' point of view, this is not a good practice as different combinations of feedingstuffs give different results, although the basic chemical composition may remain the same.

By categories of livestock and poultry, the future potential of compounded balanced mixed feed sales varies considerably. Broiler feeding has received much attention in recent years; breeding stock is excellent; feed conversion ratios of 2:5 to 1:0 are reported and feed requirements may increase modestly, reflecting a lower retail price due to expected economies in feeding and lower mortality. Also, as studies are made in reducing the current import requirements for eggs, and breeding stock and management practices improve, the protein feed requirements for layers will increase. Present feeds for dairy cattle, hogs, sheep, and goats could be considerably improved by the addition of high-protein soybean meal, now almost nonexistent. Further, the better prices for lean pork have improved the demand for soybean meal in hog rations. In addition, between 2,000 and 3,000 tons of soybean meal could profitably be added to feeds prepared on farms, government breeding stations, and so forth, boosting 1965 import requirements for soybean meal to about 10,000 tons.

The United States is expected to begin direct shipments of soybean meal to Cyprus in 1962, and supply an important part of the country's growing demand for high amino-acid soybean meal. The Ministry of Agriculture and the U. S. Agency for International Development are actively facilitating better livestock and poultry feeding in Cyprus.



One corner of Cyprus' newest mixed-feed plant. Plant is under cooperative management, and its storage capacity is being increased from 1,500 to 3,000 metric tons.

Domestic Marketing

Olive oil, the only vegetable oil produced in commercial quantities in Cyprus, is marketed as pure virgin refined oil, Riviera type (a blend of pure virgin and solvent

extracted oil), or as a blended product containing a high portion of seed oils. The seed oils used for blending include sunflower, soybean, cottonseed, and peanut. Adulteration is common at all stages of marketing. Peanut oil, because of its characteristic taste, is frequently imported and sold as peanut oil, in small bottles or large tin containers.

A large portion of the unshelled peanuts imported into Cyprus is sold for direct consumption. Roasted or salted peanuts are popular, both with the Cypriots and with the country's large foreign population. Sesame seeds are popular in baking and confectionery products, as they are throughout the Middle East. Future consumption of whole nuts — peanuts and sesame — appears linked to the normal increase in the population.

Prices

Cyprus publishes no official price figures for either wholesale or retail levels. However, representative prices for oilmeal and cake and certain select vegetable oils, presented below, may provide some useful information for comparative purposes:

Vegetable oils:	<u>U. S. Dol. per metric ton^{1/}</u>
Sunflower	328 - 335
Peanut	336 - 350
Soybean	302 - 308.
Rapeseed	300
Coconut	295

^{1/} All prices are for fully refined, deodorized oil, in reconditioned used drums, 200 kg.net, c.i.f., Cyprus, May 1, 1962.

Oil cake and meals:	<u>U.S. Dol. per metric ton^{1/}</u>
Soybean, 42 percent protein	112
Peanut, 49 percent protein	100
Cottonseed, 31 percent protein	83
Protein concentrates:	
Growers, 40 percent	160
Breeders, 44 percent	174
Broilers, 47 percent	185
Breeding sows, 45 percent	199

^{1/} Average wholesale, bagged.

Trade Restrictions

Imports, in general, are subject to license, although certain products may be imported without an import license, as specified in Open General Import License No. 24444 published on December 11, 1958, applicable for the dollar area. Soybeans and meal fall in this category. Two other Open General Import Licenses are applicable, one for the United Kingdom and the Commonwealth and the other for the remaining countries.

Import licenses are obtained by the Cypriot importer from the Cyprus Ministry of Commerce and Industry, which automatically releases the necessary dollar exchange. Due to the present adequate availability of dollar exchange and in line with the island's policy to abolish trade discrimination, the Government of Cyprus has relaxed import restrictions for numerous American products, including edible vegetable oils.

Table 3.--Cyprus: Tariff rates and duties

Item	Preferential	General
I. Oilbearing materials:		
a. Sesame.....	8%	8%
b. Copra, soybean, cottonseed, linseed	Free	Free
II. Vegetable oils:		
a. Seed oils:		
1. Crude (unrefined) per lb.	.5	.6
2. Refined	8%	8%
3. Hydrogenated	Free	Free
b. Olive oil	32%	32%
c. Olive kernel oil	Free	Free
III. Misc. animal and vegetable fats and oils:		
a. Butter, fresh.....	Free	Free
b. Margarine.....	Free	Free
c. Lard and lard substitutes	Free	Free
d. Other animal fats, greases and tallow	8%	8%
IV. Protein feedstuffs:		
a. Oilseed cake and meals:		
1. Cottonseed (April-Sep. 30).....	Free	5%
2. Other	Free	Free
3. Peanut meal	20%	20%
b. Meat and fishmeal, including tankage.....	Free	Free

The customs tariff of Cyprus is two-column—preferential rates apply on goods from British Commonwealth countries and general, or higher, rates apply on imports from all other countries.

In the case of imported goods chargeable with duty by weight, such duty is chargeable on the net weight unless otherwise specified in the tariff.

Ad valorem duties are assessed on the basis of the c.i.f. value of imported goods. As defined in the customs regulations, this is the seller's price, as per the invoice, plus the ocean "freight, insurance, commission and all other costs, charges, and expenses incidental to the making of the contract of sale and the delivery of the goods at

port or place..." of importation.^{5/} Only local currency is accepted in payment of import duties. The rate of exchange used for the conversion of invoice values expressed in terms of foreign currency is the current official rate for such foreign currency prevailing at the time of payment of duty.

Seaports

Cyprus has not a single modern harbor, and port improvement is a major concern of the government. Famagusta, an old port with some natural advantages, handles about 40 percent of import and 10 percent of export tonnage. Excluding oil, Famagusta is responsible for about two-thirds of imports; excluding the large tonnage of mineral ores exported through Karavostassi and Vassiliko, it handles about one-half of the remaining exports. Limassol, the natural terminal of a rapidly expanding area, handles about one-third as much import tonnage as Famagusta, but almost as much export tonnage. Larnaca is closest to the major marketing area of Nicosia.

None of these ports have good, deep-water harbors. Cargo is handled under great difficulties, frequently by lighter. Depth limitations vary between 20 and 23 feet. Many of the ports have so little protection from rough weather that loading and unloading must stop whenever the winds are high. The ports have been in this condition for centuries.

One obvious difficulty is delay for a ship to obtain accommodation for berth or for being unloaded by lighters. For Famagusta, available data on ship movements indicate that delays of 1 or 2 days take place regularly during the export season, although the proportion of delayed vessels to the total is relatively small, approximately 5 percent.

In spite of the normal capacity being only four ships, it is current practice in Famagusta to "double-bank" ships — a practice considered uneconomic and somewhat hazardous.

The uncertainty as regards possible delay, as well as the many disadvantages in offloading by lighter, makes foreign shippers reluctant to select any Cyprus port as a regular port of call. Congestion in harbors duplicated by congestion on quays and inadequate transport equipment and storage facilities are responsible for an increase in landing costs, damages to shipments (especially for fragile or perishable goods), and loss of markets. An additional cause for high landing charges is the need for overtime work during the period of heavy traffic.

While there are no bulk facilities for unloading grain and edible oils, Famagusta uses a novel technique to overcome this handicap. Small boatloads of bulk grain, including soybeans, can be unloaded in the port either by pneumatic pumps directly into trucks at wharfside, or bagging on board ship. The latter method is particularly useful in unloading soybean meal which may be imported in bulk as part of general cargo. Since Cyprus has no railroad facilities at its three major ports, truck transport is a vital link in handling imports.

^{5/} The basic monetary unit of Cyprus is the Cyprus pound (£) equal to \$2.82 in United States currency at the official exchange rate. The pound is divided into twenty 50-mil coins totaling 1,000 mils.



Limassol port, Cyprus. Its limited facilities are scheduled for expansion, to enable oceangoing ships to discharge directly. The Russian freighter pictured here is typical of the small coastal ships now serving the port.



Left, Famagusta harbor, Cyprus' principal port, can accommodate ships of about 22-foot draft. Local bagging facilities for soybean meal are available here.

LEBANON

Summary

Lebanon, with the only freely convertible currency in the Middle East and a strong supporter of free enterprise, is becoming an increasingly important market for U. S. soybean meal and feed concentrates. Based on the current level of imports, Lebanon will import in 1962 about 10,000 tons of concentrates, 5,000 tons soybean meal equivalent. In addition, imports of soybean meal, as meal, range between 1,000 and 2,000 tons. The United States is currently supplying about 50 percent of each category.

The U. S. competitive position in the Lebanese feed market is expected to improve, and direct shipments of soybean meal, or meal equivalent of soybeans, may exceed 10,000 tons by 1965. Important in this development will be the economy of importing soybean meal and other ingredients, in bulk for local bagging, for final mixing and blending in local feed plants. This trend, with its lower cost for necessary raw materials, also assures maximum potency of vitamins, and full mineral and antibiotic effectiveness. Presently, a substantial portion of vitamin A potency of concentrates imported from Western Europe, may be lost because of prolonged exposure to alfalfa meal in the concentrate.

Several firms have been investigating the profitability of processing soybeans in Lebanon. Preliminary results of these investigations indicate a less favorable

processing margin for soybeans than for cotton seed. Further, feed plants have expressed a desire for only toasted soybean meal, a product which cannot be produced in Lebanon without some additional capital outlay for equipment.

Lebanon imposes a high tariff on imported vegetable oils and requires special licensing from the Ministry of National Economy prior to importation. These restrictions greatly favor the importation of raw oil-bearing materials and, at least at present, preclude imports of U. S. vegetable oils in commercial quantities.

General Characteristics

Lebanon is located on the eastern shore of the Mediterranean Sea, bordered on the north and east by Syria and the south by Israel. Its 3,977-square-mile area is comparable in size to the State of Connecticut.

The population of Lebanon is estimated at over 1,600,000, 60 percent of which live in villages or small towns. Beirut, the capital city and major port, has a population of 500,000; other important urban centers include Tripoli, Sidon, Zahle, and Tyre. Average population density exceeds 400 per square mile. It is unusual for this part of the world that the numbers of Christians have generally equaled and at times possibly even exceeded those of Moslems. Christians have traditionally had a strong influence on the life of the country. Arabic is the national language, although English and French are popular in business. Literacy is high and increasing rapidly.

The largest share of the national income is derived from trade and services, including tourism; agriculture ranks second, and per capita income in Beirut is estimated at about \$500 compared to a national average of less than \$300 and about \$100 in the agricultural sector.

Based on approximations developed by the Lebanese Government's Beirut Urban Survey Study (1954), 60,000 family units (20 percent of the Lebanese total) have an income of over \$1,500 — sufficient to engage in discretionary spending.^{6/} Over 20,000 families in this group live in Beirut, and somewhat over 10,000 are in the other major urban areas, Zahle, Sidon, and Tripoli. The portion of total family income spent on food (Beirut) in representative groups is 37 percent for the upper middle class and 55 percent for the low-income class.

Sources of Supply

Oil-Bearing Materials

Lebanon is a deficit producer of oil-bearing materials, and, with the exception of olives, domestic production makes an insignificant contribution to the total supply. Olive production has remained fairly static in recent years, fluctuating between 25,000 to 45,000 tons, including about 10,000 tons consumed for edible purposes. Four years of prolonged drought, competition for agricultural labor, a free trade policy permitting importation of vegetable oil seeds for the production of less expensive vegetable oil minimize prospects for any sharp future increase in Lebanese olive oil production.

Lebanon annually produces, on a shelled basis, about 1,000 tons of peanuts, all for edible purposes; imports and re-exports tend to balance at about 300 tons each.

^{6/} Based on an average-size family unit of 5.7.

Domestic peanut acreage has remained steady and shows no sign of change. Peanuts are imported primarily from East Africa.

Lebanon produces less than 1,000 tons of cottonseed annually, from a small irrigated acreage which has remained unchanged. Imports of cottonseed, however, which average between 30,000 and 40,000 tons annually provide the major source of raw materials processed. The amount of seeds imported is equal to the annual cottonseed crush for oil. Syria provides over 90 percent of imported Lebanese cottonseed; the remaining seed originates primarily in Turkey:

	Syria <u>1,000 tons</u>	All others <u>1,000 tons</u>	Total imports <u>1,000 tons</u>
1954.	27.4	3.8	31.2
1955.	41.4	.1	41.5
1956.	37.3	.8	38.1
1957.	34.5	1.6	36.1
1958.	23.3	3.2	26.5
1959.	35.0	2.0	37.0
1960.	18.9	.4	19.3
1961 (est.).	25.0	10.0	35.0
1962 (forecast).	35.0	(<u>1</u> /)	35.0

1/ Negligible.

The 1960 decline in the availability of cottonseed from Syria reflects the increased demand for vegetable oils in that country, particularly by a new shortening plant.

Other oil-bearing materials imported include 4,000 to 6,000 tons of copra, mainly from the Philippines, 3,000 to 4,000 tons of sesameseed from the Sudan and other African areas and Iraq. Small quantities of flaxseed, castor, and hempseed are imported annually.

In 1960 and 1961, Lebanese oil crushers were concerned about the decline in the cottonseed supply available for importation from Syria and made numerous requests concerning the economy of processing U. S. soybeans by screw presses, or batch pre-press solvent units. If domestic requirements for high-protein soybean meal continue to increase, as is expected, and the relative advantage of processing cottonseed declines, Lebanon is expected to be a market for 10,000 tons of soybeans annually.

Preliminary cost studies have indicated that the profit margins on processing soybeans are currently somewhat less than those for cottonseed, particularly in the current 1961-62 marketing year with its abundant cottonseed supplies at unusually low prices.

Vegetable Oils

The total edible supply of vegetable oils increased from 21,100 tons in 1960-61 to 22,600 tons in 1961-62, but remained below the 1959-60 estimate of 23,900 tons. The forecast for 1962-63 is for a slight further decline.

Table 4.--Lebanon: Edible vegetable oils, supply and disposition, marketing years, 1960-62

	1960-61	Preliminary 1961-62	Forecast 1962-63
	<i>1,000 m.t.</i>	<i>1,000 m.t.</i>	<i>1,000 m.t.</i>
Opening stocks, October 1.....	5.4	4.2	3.0
Production	14.6	17.2	15.6
Imports	1.1	1.2	1.5
Total supply	21.1	22.6	20.1
Exports	.1	2.0	.1
Domestic disappearance.....	16.8	17.6	17.4
Ending stocks, September 30.....	4.2	3.0	2.6
	<i>Lb.</i>	<i>Lb.</i>	<i>Lb.</i>
Consumption per capita	23.7	24.6	23.6

Office of the U.S. Agricultural Attaché, Beirut, Lebanon.

Foreign trade plays a relatively minor role in the supply of vegetable oils for consumption. Annual imports of edible vegetable oils have averaged over 1,000 tons annually, including 750 tons of hardened cooking and table fats. Lebanese imports of edible vegetable oils consist mainly of specialized fats, hydrogenated products, e.g., shortening and margarine. The United States has been an important supplier of hardened cooking fats; the United Kingdom and the Netherlands are important suppliers of margarine.

Lebanon exports small amounts of edible oils to neighboring countries, including olive oil to Syria and cottonseed oil to the oil-rich Arabian states. The quantities involved, however, are small, generally averaging only in the hundreds of tons.

Except for small quantities of sulfur oil and refining foots, all soap stocks are imported. In addition to coconut oil imported as copra coconut and palm oil, fatty acids imports are particularly significant, averaging over 3,000 tons annually. West Germany, Denmark, the Netherlands, and the United States are important sources of fatty acids for the Lebanese soap industry. Linseed oil imports originate in the United Kingdom. Exports of inedible oils are negligible.

Animal Fats

Lebanon produces 2,000 to 3,000 tons of edible slaughter fats annually. Butter production, including animal ghee generally from sheep and cows, is estimated at less than 100 tons. Very substantial quantities of butter are imported through Lebanon's free zone for consumption in the neighboring oil-rich kingdoms. Imports of butter for domestic consumption average 1,500 tons annually.

Oilcake and Other Protein Meals and Concentrates

Lebanon is an important producer of oilseed cakes primarily from imported cottonseed and copra. The total supply of oilcake and meal from the four major types of oil-bearing materials processed in the country — cottonseed, flaxseed, copra, and peanut — is forecast at about 32,400 metric tons in 1961-62, somewhat above the previous year's level of 28,500 tons.

Table 5.-- Lebanon: Oilcake ^{1/} supply and disposition, marketing years, Oct. 1, 1960-61 and 1961-62

Item	1960-61	1961-62	Forecast 1962-63
	<i>1,000 m.t.</i>	<i>1,000 m.t.</i>	<i>1,000 m.t.</i>
Supply:			
Opening stocks, October 1	3.5	2.3	3.3
Production	17.5	21.4	24.6
Imports	7.5	8.7	3.9
Total supply	28.5	32.4	31.8
Disposition:			
Exports and re-exports	5.6	7.2	6.9
Feed	20.6	21.9	21.6
Ending stocks, September 30	2.3	3.3	3.3
Total disposition	28.5	32.4	31.8

^{1/} Includes cottonseed, peanut, flaxseed, and coconut only.

Office of U.S. Agricultural Attache', Beirut, Lebanon.

Lebanon is a small importer of oilcake from neighboring countries, particularly Syria. Cottonseed cake imports for 1961-62 are estimated at 7,500 tons and account for nearly 90 percent of the 8,700 tons of imported oilcake. Exports or re-exports of oilcake nearly approximate imports, and are estimated at 7,200 tons in 1961-62. Cottonseed is the most important type of oilcake exported. Cyprus, Malta, the United Kingdom, the Netherlands, and West Germany have been important importers of Lebanese cottonseed cake, the largest portion of which is from decorticated seed. Solvent extracted cottonseed meal is also exported.

Lebanon is importing sharply increasing quantities of protein concentrates and soybean meal. The importation of concentrates in 1961 approximated 8,500 tons and in 1962 is expected to exceed 10,000 tons. Lebanese imports of concentrates reported monthly for 1961 and first quarter 1962 were as follows:

	1961	1962		1961	1962
	<u>Metric tons</u>	<u>Metric tons</u>		<u>Metric tons</u>	<u>Metric tons</u>
January	642	349	August	821	(1/)
February	501	1,256	September	988	(1/)
March	678	1,079	October	665	(1/)
April	716	(1/)	November	935	(1/)
May	685	(1/)	December	807	(1/)
June	289	(1/)			
July	770	(1/)	Total ^{2/}	8,497	(1/)

^{1/} Not available.

^{2/} Totals, 1960 = 4,201 m.t.; 1959 = 2,130 m.t.

Of the 8,497 tons of concentrates imported in 1961, the United States supplied 4,878 tons and Western Europe the remaining 3,619 tons. Small quantities of pre-mixed feeds are re-exported. Approximately 50 percent of the dry weight of these concentrates, or over 4,000 tons, was soybean meal.

Soybean meal imports in addition to that portion imported as part of the concentrates are estimated as follows:

	<u>Metric tons</u>		<u>Metric tons</u>
1959-60	500	1961-62	1,500 to 2,000
1960-61	800	1962-63	2,000 to 3,000

The United States has supplied the largest portion of the soybean meal imports, all 44 percent protein, bagged. The Netherlands became an important supplier in late 1961 and remains one currently.

The Lebanese mixed-feed industry is now importing concentrates at an average cost of about \$140 to \$150 per ton, c.i.f. Beirut. These concentrates are about half soybean meal and are imported in small lots of 100 tons each, bagged with vitamins, antibiotics, and minerals which were added within 90 days prior to distribution as a feed ingredient. The industry could, however, get soybean meal; it is delivered in Beirut now at between \$100 and \$105 per ton.

Thus, it appears to be economically sound for the industry to import more soybean meal in bulk and bag it locally for use in the production of mixed feeds. All other ingredients for pre-mixes can be obtained locally or imported, and can be prepared with available mixing and grinding machinery. If the industry adopts this practice, a 50-percent saving in transportation and handling costs can be expected. Further, maximum potency for vitamins and full mineral response will be assured.

Bulk importation of soybean meal is a strong probability for late 1962. Numerous mixed-feed manufacturers have expressed a strong interest in combining orders, thus facilitating individual shipments of 500 to 1,000 tons as part of general grain cargoes.

Livestock Economy

Official census data are not available for all categories of livestock and poultry, but estimates for poultry and milk cow numbers indicate a sharply increasing trend — important to the country's developing mixed-feed industry.

Table 6.--Lebanon: Livestock and poultry population, 1957-62 (stocks as of January 1)

Type	1957	1958	1959	1960	1961	1962
Cattle:						
Milk cows.....	15.6	16.0	16.5	17.0	18.0	19.0
Other.....	27.4	28	28.5	27	20	21
Total	43	44	45	44	38	40
Goats.....	450	400	350	360	370	350
Hogs (all classes).....	3.4	3.8	4.0	4.5	4.8	4.7
Sheep.....	55	55	60	60	50	50
Poultry:						
Broiler breeding	($\frac{1}{2}$)	($\frac{1}{2}$)	42	49	92	117
Layer breeding stock	($\frac{1}{2}$)	($\frac{1}{2}$)	5	8	11	16
Table egg layer stock	($\frac{1}{2}$)	($\frac{1}{2}$)	316	388	396	423
Total	($\frac{1}{2}$)	($\frac{1}{2}$)	363	445	499	556

Office of the Agricultural Attache', U.S. Embassy, Beirut, Lebanon.

$\frac{1}{2}$ /Not available.

The broiler industry, which expanded sharply during the 1960-61 period of easy credit, tie-in agreements with mixed-feed plants, and the importation of soybean meal and concentrates, is expected to continue to expand through 1965, but at the more modest rate indicated in 1962 over 1961. The trend for increased inventories of milk cows is consistent with the demand for larger supplies of fluid milk for a relatively urbanized country. The continuing improvements in milk handling have been important in increasing the distribution of fluid milk.

Mixed-Feed Industry

The mixed-feed industry of Lebanon is concentrated in Beirut. Two mixed plants, more commonly known by their trade names "Vitasni" and "Provimi," are importers of soybean meal and concentrates used in the preparation of balanced, formula-type feeds, including pellets, primarily for the poultry industry. Two feed plants with parent firms in the United States import pre-mix protein concentrates as base ingredients for their balanced feeds. Numerous small hammer mills utilize small quantities of imported concentrates for the custom blending of mixed, but not necessarily balanced, feeds. At least three other industrial groups are currently reviewing plans for new modern mixed-feed plants.

Only estimates can be made as to the output of mixed feeds in Lebanon. Combined output of Vitasni and Provimiplants, the country's two largest, is conservatively estimated at 1,000 tons monthly, 12,000 annually. Output of these firms can be expected to increase to 1,500 tons monthly by 1963. Annual output of balanced mixed feeds at the two U. S. affiliations, based on imported concentrates, is conservatively estimated at 5,000 tons. The total balanced mixed-feed output of Lebanon probably ranges between 15,000 and 20,000 tons.

Protein concentrates are used in the preparation of feeds at numerous small feed plants throughout the country and directly on farms. No accurate estimate of this output appears possible, although up to 10 percent of imported concentrates are estimated as being utilized directly on farms, and up to 30 percent by the small widely scattered feed plants. As the size of the poultry unit increases, there is a marked trend to purchase prepared mixed feeds, rather than to mix the ingredients on the farm.

Mixed-feed plants import bagged soybean meal against their own accounts on a monthly basis in lots of from 100 to 150 tons. Protein concentrates are imported in a similar manner, although numerous brokers are involved. Corn, the major imported grain used in feed manufacture is imported by brokers and distributed through a pre-arranged agreement to feed plants. Well-known U. S. companies are available for the distribution of vitamins, minerals, antibiotics, and so forth.



In Lebanon, outdoor feeding on small poultry farms is not uncommon. Pellets are generally used then to reduce loss.

The soybean meal currently imported into Lebanon is 44 percent protein toasted meal of U. S. or Dutch manufacture. The protein concentrate or pre-mix is sold on a 44 percent to 48 percent protein basis. The U. S. origin concentrate contains only stabilized vitamin A units. This fact is particularly important since this vitamin has a reduced potency after long contact with alfalfa meal, a common ingredient of protein concentrates.

The future expansion of the mixed-feed industry is related to several important factors, most of which are directly concerned with the poultry industry:

- (1) An increase in poultry numbers and further concentration in larger poultry units
- (2) The importation of feed ingredients at lower cost, enabling lower feed prices to producers
- (3) Improvement in poultry management and breeding stock
- (4) Disease control.

Prices are expected to remain favorable, and introduction of marketing graded products could help further. While imports of poultry meat and eggs are a seasonal factor, they provide less than 10 percent of domestic requirements.

Based on a projection of closely related indicators, production of balanced mixed feeds in 1965 may approximate 30,000 to 35,000 metric tons and require only 2,500 tons of imported concentrate, but over 7,000 tons of soybean meal as soybean meal. The assumptions important to this projection are:

- (1) A continued expansion of the poultry industry, including a 40-percent increase in inventory units
- (2) A somewhat larger portion of total feed requirements being supplied by the balanced feed industry
- (3) A replacement of 75 percent of the current protein concentrates by the importation of ingredients, particularly soybean meal in more economical bulk form for local bagging and mixing.

At least three additional mixed-feed plants are likely to be constructed in the near future. Equipment for them is now being purchased, primarily in Western Europe. The combined output of these plants is expected to total over 1,000 tons monthly, or 10,000 to 15,000 tons annually.

There is also considerable latitude for increasing the soybean meal portion of presently produced balanced feeds, which probably averages near 20 percent of the dry weight, including the meal equivalent of concentrate. Importation of soybean meal in bulk under a joint purchase program for local bagging and mixing is an important step facilitating the broader use of high-amino-acid toasted soybean meal.

Soybean meal will have two other outlets in Lebanon. Feed plants which now mix a limited number of ingredients to produce a mixed, but not necessarily a balanced, feed have expressed an interest in importing soybean meal. Consumption requirements of these small hammer mills, including those on government farms, will probably approximate 2,000 tons by 1965. In addition, direct sales of soybean meal to poultry units not limited exclusively to balanced or mixed feeds is expected to exceed 1,000 tons.

Vegetable Oil Industry

The vegetable oil industry of Lebanon is concentrated in Beirut and, during the more recent years, has generally operated as a Syndicate.^{7/} Nine plants have been associated with the Syndicate, eight of which are located in Beirut and one in Tripoli. (Plant names, addresses, and key information may be found in the Appendix.)

^{7/} The National Lebanese Vegetable Oil Society, located in Beirut, after being discontinued for a short time, is currently being reactivated.

The vegetable oil industry is primarily engaged in processing cottonseed by screw presses. The estimated capacity is somewhat over 80,000 tons of seed annually. Several of these plants are also processing copra by solvent extraction. The capacity of the solvent equipment is conservatively estimated at 20,000 tons.^{8/} A new plant is under construction in Tripoli, which will add over 20,000 tons to the country's pressing capacity. Lebanon annually processes about 40,000 tons of cottonseed and 5,000 tons of copra. Refining capacity, limited by the deodorizers, probably ranges between 20,000 and 25,000 tons.

Syrian cottonseed is the major raw material processed in Lebanon. The seed is purchased under liberal credit terms and can be delivered by truck within the day of purchase. Such an arrangement is particularly advantageous to the processor with only limited storage facilities for cottonseed. Syrian cottonseed of 1.5 percent FFA is low in moisture and is not further dried in Lebanon. Cottonseed is delinted, with two cuts commonly taken. It is decorticated only if the cake is intended for export and is cracked and flaked in rollers only if the cake is intended for local consumption. The average oil content is 18.5 percent, and recovery averages near 14 percent. Cake for local consumption is cracked, coarsely ground, and then sacked and sold for cattle feed. One mixed-feed plant prefers to utilize only the slabbed cake, doing its own grinding, another purchases only ground meal. Farmers still prefer a dark meal with a high oil content to a higher protein, lower fiber and oil content product.

The cottonseed oil is caustic refined. Bleaching is conducted either under vacuum or in open tanks. Activated (German) earths, clay, and so forth, are used and filtered out in conventional filter presses. Deodorizers and most refining units of the batch type are in common use. Deodorizing temperatures vary within a narrow range of 165° - 180°C, but some equipment reportedly is capable of up to 220°C. The use of two- and three-stage vacuum ejectors and thermo-compressors is common. No accurate measure of maximum absolute pressure in mm. of mercury was possible. Oil is not hydrogenated in Lebanon, as all domestically produced oil is sold in liquid form.

The vegetable oil processing industry is following closely the demand of the mixed-feed industry for larger quantities of soybean meal. Cost studies concluded at three plants and still underway indicate a more favorable margin in processing cottonseed. Existing expellers, particularly the newly installed units in Tripoli, could, with minor adjustments, process soybeans at the current price relationships. The use of a pre-press-solvent combination, however, does not appear profitable. Feed plants have indicated they would only purchase toasted meal, thus generally precluding expeller processing. Existing plants would require cleaning, flaking, and toasting units. Further, a market for soybean oil would need to be developed, either domestically or for export. Some processors expressed the view that marketing of soybean oil during the winter months would be preferable as it does not need to be winterized.

U. S. equipment is commonly used in the delinting process. Screw presses included those of French Equipment Co. (U. S.), MIAG (Germany), SKODA (Czechoslovakia), Rose-Downs (U. K). Comments on the U. S. and German equipment were particularly favorable. De Laval and Sharpless (U. S., U. K., Sweden) continuous and semi-continuous refining plants consisting of one and two centrifugals are in operation.

Filling plants for containers of 17 kilograms gross (35 lbs.) are common in vegetable oil plants. The tins are generally purchased from a central supplier. Labels

^{8/} Excluding sulfur oil establishments.

of paper or lithographic labels are standard. Small quantities of oil are marketed in bulk railway tank cars or in drums.

At retail, locally produced cottonseed and coconut oils are sold for general-purpose use. Imported peanut oil and U. S. shortening enjoy a selective market. Peanut oil is widely used by restaurants, hotels, and similar establishments; U. S. shortening is a popular cooking fat and even with its premium price is used by all consuming categories. Soybean oil is not marketed in Lebanon.

On January 27, 1962, official ceiling prices were fixed for the sale of local cottonseed oil on the domestic market:

	<u>Cents per pound</u> ^{1/}
<u>To wholesalers</u> and semiwholesalers, for delivery at oil mill, packed in drums or tins . . .	.164
<u>To retailers</u> , for delivery at wholesaler's or semiwholesaler's premises, packed in:	
Drums	.166
Tins.	.167
<u>To consumers</u> in retailer's shop	.173

^{1/} In bulk, net weight.

Table 7.-- Beirut wholesale market average prices

Year	Animal ghee, Samneh Hamwi Hadidi	Local coconut oil	Edible olive oil, 1 percent acidity	Cottonseed
	<i>Dol. per metric ton</i>	<i>Dol. per metric ton</i>	<i>Dol. per metric ton</i>	<i>Dol. per metric ton</i>
1950	1,731.49	535.87	688.56	51.86
1951	1,687.65	602.68	857.15	69.64
1952	2,345.39	349.49	614.33	54.61
1953	1,684.21	476.61	631.58	67.25
1954	1,514.40	525.53	578.39	74.63
1955	1,583.83	407.19	793.41	65.87
1956	1,804.35	385.09	1,099.38	77.64
1957	2,022.49	364.30	781.99	75.37
1958 ^{1/}	2,054.47	358.12	788.49	72.25
1959	3,036.45	364.50	792.39	74.48
1960	3,433.95	558.06	1,014.65	76.10
1961	2,137.34	448.26	1,055.67	73.93

Published data compiled by the Office of the Agricultural Attaché, U.S. Embassy, Beirut, Lebanon.

^{1/} 7-month average.

Per capita consumption of edible vegetable fats and oils is estimated to have totaled about 23.7 pounds in 1960-61, somewhat below the 1959-60 level and slightly below the 24.4 pounds forecast for 1961-62. Animal fat consumption, which is an estimate at best, probably added about 4 to 5 pounds in each of the periods. The estimated combined animal and vegetable fats and oils provide a per capita consumption of about 28 to 29 pounds, which is substantially above the average for the Middle East. Consumption of processed vegetable oils and butter is generally restricted to the urban areas, while animal fats and olive oil are important in the rural regions.

There is expected to be little change from the current level of edible fat consumption in Lebanon. Per capita income, which increased sharply until 1956, appears to have leveled off. As the construction boom tapers off, with its high level of employment, and unskilled laborers seek employment elsewhere or return to rural homes, a further adverse shift in income may result. A portion of this possible decline in urban income may be offset by increased income of rural families engaged in livestock farming where profit margins appear well maintained.

Climate for U. S. Business in Lebanon

The overall investment climate in Lebanon is highly favorable. The government pursues a policy of nonexpropriation, free trade, free currency convertibility, and minimum interference in private enterprise. The external financial position is good, and foreign investment continues to flow into the country. Beirut is an international trade center, with a well-equipped port and excellent transportation, insurance, banking, communications, and storage facilities.

The official gold and foreign exchange holdings of Lebanon remained steady in 1961 at a reported \$138 million. The value of imports continues to greatly exceed the value of exports. Tourist and other service revenues and capital inflow from neighboring Arab states are continuing at a steady pace, and gold remains the country's most valuable import, mainly from the United Kingdom. The United States ranks second only to the United Kingdom as a source of Lebanese imports.

Domestically, the economic boom is continuing, especially in commercial construction, unloadings at Beirut port have increased sharply, and tourist travel is rising.

Some uncertainty about the future may be attributed to the growing concern over relative prosperity of urban and rural populations. The rural population has been plagued with prolonged droughts and resulting low production. The rising cost of living has meant some hardships for the rural and labor groups and continued scarcity of industrial credit fosters high interest rates and curtails business expansion.

As an inducement to private foreign capital investment in Lebanon, the government passed a law on December 23, 1953, which came into effect on February 10, 1954, and was extended to be in force through February 3, 1965, granting tax exemptions to companies that have: (1) as an objective, the exploration of a new project to step up national production, contributing at the same time to the economic development of the country; (2) a minimum initial capital of L.L. 1 million pounds, (\$335,000) invested totally in Lebanon; and (3) a minimum annual payroll of L.L. 100,000 (\$33,500) to Lebanese personnel.

Transportation and Communications

Lebanon's highway system, which covers somewhat over 2,500 miles, is considered adequate for the economy. The principal roads include the coastal road running

from Nakoura on the Israeli border to the Syrian frontier in the center, and the Beirut-Damascus road. Secondary roads run east from the coastal highway and connect with mountain towns.

The Lebanese railway system carries primarily freight. Its equipment is largely antiquated, with much of the rolling stock over 30 years old, and competition with highway transport is keen.

The country's three railroad lines are operated by the Chemin de Fer de l'Etat Libanais (CEL). A standard-gage line connects Tripoli with Ras Nakoura via Beirut. A second standard-gage track from Tripoli is connected through the Syrian and Turkish railways with the European rail network. Total standard track is about 200 miles. A narrow-gage line runs from Beirut to Rayak and Damascus, Syria. Total narrow gage is about 50 miles.

Beirut is the country's major seaport. The port has two well-protected harbors, and can be reached in all types of weather. Seven heavy tonnage vessels can berth simultaneously; 10 others can be moored in the harbors, and a third harbor is under construction. The port service area includes modern warehouses, standard- and narrow-gage track, a free zone, customs warehouse, and so forth.

Tripoli is the country's only other commercial seaport but its shallow undeveloped harbor limits its usefulness. Petroleum tankers service pipelines at Tripoli and Sidon.

Excellent air passenger and air cargo services are provided from Beirut's International Airport at Khalde, 4 miles south of Beirut. Airports at Kleiate (14 miles north of Tripoli) and at Rayak are not open to commercial air traffic. All Lebanese airports are government owned and operated.

Lebanon has a modern telephone system which includes automatic dialing for Beirut's 35,000 telephones. By use of a very high frequency, the system has been extended to include Tripoli and Sidon and further extensions are in process.

A government-operated broadcasting station equipped with 2,500 watt (medium wave) and 1,000 watt (short wave) transmitters is located in Beirut. Reception extends throughout Lebanon and neighboring countries. Two privately owned television stations in Beirut provide service for the country.

Trade Restrictions

Certain imported products competing with local production are subjected to import control by means of licenses issued by the Ministry of Agriculture in advance of importation, including corn, bran, wheat, barley, cottonseed oil, olive oil, and peanuts.

Specific duties are assessed either on the actual net, semigross, or gross weight, on the volume, or by the piece. If the container has commercial value, duty is assessed on it; however, a drawback is permitted on its reexportation.

The dutiable value is the purchase price plus all subsequent expenses up to the time of the customs declaration. Special customs duty consideration is given agricultural and industrial products imported from the Gaza strip, Syria, Iraq, and Jordan; certain agricultural products originating in Egypt, Jordan, Saudi Arabia, Syria, and Iraq are admitted free of customs duty.

Duty is stated and payable in Lebanese currency. Conversion of foreign values is at the official rate.^{9/}

The only products which must be marked to show the country of origin when imported into Lebanon are butter, edible fats, wines, sugars, jams, and sirups. These must be labeled to show the nature and weight of contents, date of packing, keeping quality, and date of guarantee, and shipments of U. S. butter and edible fats must be accompanied by a certificate from the U. S. Food and Drug Administration. Butter shipped unwrapped must be accompanied by a card showing the country of origin.

Table 8.--Lebanese customs duty rates^{1/}

Customs Tariff No.	Commodity	Unit ^{2/}	Duty
07-01 b	Olives, fresh	Ad valorem	50%
07-03 a	Olives, preserved	Ad valorem	50%
12-01 a	Cottonseeds and hempseeds		Exempted
12-01 b	Sesame	Ad valorem	11%
12-01 c	Copra, castorbeans, peanuts, and flaxseeds		Exempted
12-01 d	Other vegetable oilseeds not elsewhere specified		Exempted
15-07 a-1	Olive oil for the soap industry	M.T.G.W. Ad valorem Min.	\$113 25%
15-07 a-2	Other vegetable oils for the soap industry (cottonseed, sesame, peanut, corn, soybean, etc.)		Exempted
15-07 b-1	Linseed oil	M.T.G.W. Ad valorem Min.	\$181 35%
15-07 b-2	Sunflower, corn, soybean, cottonseed, peanut, and castor oils	M.T.G.W. Ad valorem Min.	\$159 35%
15-07 b-3	Olive oil, edible	M.T.G.W. Ad valorem Min.	\$273 35%
15-07 b-4a	Palm and coconut oil in containers weighing 5 kgs. or less	M.T.G.W. Ad valorem Min.	\$230 35%
15-07 b-4 b.....	Palm and coconut oil in other containers	M.T.G.W. Ad valorem	\$159 35%
15-07 b-5	Palm oil	M.T.G.W. Ad valorem Min.	\$127 35%

(See footnotes at end of table.)

^{9/} The Lebanese pound (LF) consisting of 100 piasters in the official monetary unit. The official exchange rate is US\$1 equals L.L. 2.21, which is used only at the Customs. The open market rate is subject to fluctuation and now stands at L.L. 3.25.

Table 8.-- Lebanese customs duty rates^{1/} (Continued)

Customs Tariff No.	Commodity	Unit ^{2/}	Duty
15-07 b-7	Other vegetable oils, either fluid or solidified, raw or refined	Ad valorem Min.	35%
15-08 a	Linseed oil, cooked oxydated or siccative	M.T.G.W. Ad valorem	\$181 35%
15-08 b	Animal and vegetable oils, cooked, oxydated, dehydrated, sulfured, or otherwise modified	Ad valorem	25%
15-10 a-1	Sulfured olive oil for the soap industry	M.T.G.W. Ad valorem	\$113 25%
15-10 a-2	Other sulfured oils for the soap industry		Exempted
15-10 b	Industrial fatty acids and industrial fatty alcohols		Exempted
15-10 c	Other industrial fatty acids, acid oils from refining process, fatty industrial alcohols	Same as 15-07 (according to kind)	
15-12 a	Animal and vegetable fats and oils, hydrogenated, even refined, but not prepared, for soap industry	Same as 15-07 a	
15-13 a	Preventive or curative extracts of margarine and other foodstuff fats	Ad valorem	11%
15-13 b	Other margarine and foodstuff fats	m.t. Ad valorem Min.	\$181 35%
23-04	Vegetable oilseed cakes, except residues		Exempted
23-07 a	Feed premixes, and concentrates, and their additives, used for the growth of livestock and egg layers		Exempted
23-07 b	Other animal prepared feed not elsewhere specified	Ad valorem	11%

^{1/} Import custom duties are levied at the official rate. Minimum of U.S. \$1.00 equals L.L. 2.20.

^{2/} M.T.G.W. = Metric ton gross weight (including export container)

m.t. = Metric ton gross weight in final container

Additional charges and municipal tax: 3% municipal consumption tax
\$2.70 per metric ton literage
\$2.70 L.L. 6.00 per metric ton quay dues
\$3.10 L.L. 7.00 per metric ton portorage

MALTA

Summary

Malta imports with free currency over 3,000 tons of crude degummed soybean oil in bulk, and about 2,000 tons of margarine and shortening annually. From its excellent relatively new refinery, Malta re-exports fully refined soybean oil to neighboring

countries. The potential of Malta as an expanding market for soybean oil seems to depend more on the development of export outlets than on any increase in domestic consumption of edible fats and oils, which averages about 40 to 45 pounds per capita, high for any country in the Mediterranean area. Malta is being encouraged to refine oil for re-export to adjacent areas without refining equipment and with harbor limitations restricting access to small coastal vessels.

As Malta continues to exercise more latitude by freeing imports to commercial bids from all nations, the U.S. ability to compete in this market will be greatly improved. U.S. crude soybean oil was exported directly to Malta for the first time in 1960, and accounted for 15 percent of total imports. The U.S. exporter will need to adjust to shipping conditions which require bulk oil arrivals in Malta averaging 700 tons every 2 to 3 months.

A mixed-feed industry is rapidly developing on Malta to meet the needs of the livestock and poultry industry. Increased emphasis on egg production and more intensive feeding of beef and dairy cattle without access to pastures are contributing to the increased demand for protein feeding media. The present 15,000 tons of low-protein cottonseed cake imports, and protein concentrates heavily weighted by fish meal, is expected to be supplemented by higher quality vegetable protein, particularly soybean meal. Mixed-feed manufacturers are making initial inquiries about bagged 44-percent soybean meal. Following a gradual introduction of 500 to 1,000 tons of soybean meal, import requirements for this high-amino-acid meal could average 5,000 tons a year by 1965, especially if the planned 30,000-unit poultry farms are set up.

The United States, which is currently delivering bagged soybean meal to Greece, can export soybean meal to Malta at a per-protein-unit price that is competitive with other proteins now being imported.



Intensive land utilization is the rule in Malta. This means that grazing land is scarce and concentrate feeding necessary.

General Characteristics

The Maltese Islands, which include Malta, Gozo, and Comino, are located about 60 miles south of Sicily and 150 miles north of Tripoli, Libya. The total land area is 122 square miles. The climate is typically Mediterranean.

The population of the islands is estimated at about 330,000 and increasing at 1 percent annually. A relatively heavy emigration contributes to the stability of the population. In the period 1938-48 when emigration was restricted by circumstances, the population increased by nearly 2 percent annually. Population density is nearly 3,000 per square mile.

Malta has most of the signs of an industrializing economy, including a decline in the agricultural labor force, increased mechanization of agriculture and a corresponding decline in draft animals, migration to town of part- and full-time farmers. Also, interestingly, farm income (\$375 per capita) has been rising more rapidly than national income (\$365 per capita), indicating that higher purchasing power is resulting in increased demand for agricultural products in spite of rising farm prices.^{10/}

The people of Malta are predominantly Roman Catholic. Both Italian and English are spoken in urban areas.

While agricultural production is important to Malta, only 5 percent of the national income is attributed to that sector of the economy. At best, agricultural production, in terms of calories, supplies the equivalent of 3 months' consumption; imports supply the remainder.

All vegetable oils and cooking fats are imported, and the number of beef animals slaughtered commercially for meat is equal to total imports of beef animals. Some tallow has been imported from the United States.

Supply and Distribution

Malta imports nearly its entire requirements of oilseeds and protein for livestock feeds, including compound mixes and cottonseed cake.

Peanuts are imported primarily for edible purposes. The somewhat lower 1960 import level for cottonseed cake reflects a decline in export availabilities from drought-stricken Near and Middle East countries, and somewhat higher utilization of imported protein concentrates from the United Kingdom and a decline in draft animals.

Import requirements for protein meals are likely to increase sharply, reflecting acceptance of better balanced rations by poultry, beef, and dairy farmers as a means to higher profitability. Direct soybean meal imports are under consideration by the mixed feed industry. Presently, Malta could effectively utilize up to 1,000 tons of bagged 44-percent soybean meal in concentrated feeding, and 5,000 tons — 25 percent of total cake and meal requirements — would be a realistic goal for 1965.

All vegetable oils and the largest portion of animal fats consumed in Malta are imported.

Imports of crude soybean oil, begun in 1958, have now all but replaced other seed oil imports. Refined soybean oil had been supplied primarily by Denmark, the United Kingdom, Japan, and the Netherlands. Crude degummed soybean oil is currently being imported from Denmark and the United States, but in earlier years had originated from Israel and Japan.

^{10/} Report of the Census of Agriculture, Valletta, Malta.

Table 9.--Malta: Imports of oilseeds, oilcake, and meals, 1957-61

Item	1957	1958	1959	1960	1961
	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>
Peanuts	288	492	418	425	(¹ /)
Cottonseed	245	6	0	(² /)	(¹ /)
All other seeds	0	13	5	10	(¹ /)
Total	533	511	423	435	(¹ /)
Meat and fishmeal other than concentrates	(² /)	(² /)	(² /)	(² /)	(¹ /)
Cottonseed cake	16,888	15,841	15,764	13,404	18,320

¹/Not available. ²/Negligible.

Table 10.--Imports of selected edible animal fats and vegetable oils, 1957-61

Item	1957	1958	1959	1960	Preliminary 1961
	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>	<i>Metric tons</i>
Soybean oil:					
Refined	1,228	1,440	0	103	43
Crude	0	1,446	4,154	3,275	3,186
Total	1,228	2,886	4,154	3,378	3,229
Olive oil	52	12	25	28	25
All other vegetable oils	¹ /473	(² /)	(² /)	(² /)	21
Margarine	1,244	1,485	1,680	1,857	3,000
Lard and substitutes ³ /	1,195	1,195	1,266	1,148	(⁴ /)
Total	4,192	5,578	7,125	6,411	(⁴ /)

¹/Peanut oil only. ²/Negligible. ³/Excludes an average of 300 to 400 tons of creamery butter.
⁴/Not available.

Olive oil imports originate from Italy, France, and Tunisia. Peanut oil, not imported since 1957, came from Argentina. Margarine and shortening are primarily imported from the United Kingdom and the Netherlands; lard and butter from New Zealand.

Liquid oil imports, which rose sharply through 1959, appear to have leveled off in 1960, and probably reflect a decline in re-exports, which appears to have continued in 1961 and early 1962. -The United States is expected to increase its share of the Malta soybean oil market from its 1960 position of less than 20 percent to a probable 50 percent by 1963. Greater import freedom, which is enabling the Malta oil refinery to seek and accept the most favorable delivery terms, has improved the U. S. competitive position.

The sustained (15 percent annually) upward trend in margarine imports is a reflection of the acceptance of hydrogenated vegetable oils as table spreads. No hardening facilities exist on Malta.

Per capital consumption of edible fats and oils in Malta is about 40 pounds, high for any Mediterranean country. Supply and distribution for average recent years appear below:

Opening stocks, October 1:	<u>Metric tons</u>
Vegetable fats and oils ^{1/}	450
Animal fats ^{2/}	<u>100</u>
Total	<u>550</u>
Domestic production:	
Animal fats.	200
Imports:	
Vegetable oils ^{3/}	5,300
Animal fats.	<u>1,600</u>
Total	<u>6,900</u>
Total supply:	
Vegetable oils	5,750
Animal fats.	<u>1,900</u>
Total	<u>7,650</u>
Re-exports.	<u>4/</u> 1,000
Edible consumption:	
Vegetable oils	4,200
Animal fats.	<u>1,750</u>
Total	<u>5,950</u>
Industrial consumption:	
Vegetable oils	100
Animal fats.	<u>50</u>
Total	<u>150</u>
Ending stocks:	
Vegetable oils	450
Animal fats.	<u>100</u>
Total	<u>550</u>

^{1/} Including margarine, shortening, and liquid oils.

^{2/} Including butter, tallow, and lard; excluding fat content of milk.

^{3/} Including oil equivalent of imported oilseeds.

^{4/} In 1960, 1,400 tons was re-exported; in 1961, 975 tons was re-exported.

It will require sophisticated, well-developed promotional activities to maintain the current level of per capita fat consumption in Malta in the face of a possible reduction in the heavy-fat-consuming foreign population, primarily British, and adverse income generating factors.

Vegetable Oil Industry

The vegetable oil industry of Malta is represented by The Edible Oil Refining Company, Ltd., with its plant at Marsa, a suburb of Valletta. The refinery has always concentrated on the refining of crude degummed soybean oil, imported primarily in bulk from Western Europe.

Initially, some consideration was given to the establishment of an extraction facility and a complete refining plant. The economy of importing crude oil and the generally unsophisticated meal market on Malta tended to dictate in favor of a unit specializing in refining of crude oil.

The crude degummed imported oil arrives in deep tanks of freighters. Individual lot sizes vary, but average about 700 tons. The oil is pumped into storage tanks, transferred to tank trucks, and shipped to storage tanks at the Marsa refinery.

Plant output varies within a fairly narrow range of 2,000 and 3,000 metric tons. Capacity of the two Alpha De Leval (French) centrifuges is estimated at 20 tons each. Neutralizing is of the batch type, with caustic soda the common reagent. Two Luirgi (German) deodorizers of about 4 tons per batch with a maximum temperature of 250°C, with cooling units, are in use. Maximum pressure in terms of mm. of mercury is reported at 3, although in the summer, with high moisture, 6 mm. is not uncommon in the deodorizers equipped with two-stage ejectors and thermocompressors. All bleaching is under vacuum. Activated earth of imported German tonzil is used.

The refinery is equipped with a semiautomatic canning unit of Italian manufacture. A small portion of the output is packed in tin containers for distribution. The largest quantity of refined oil is packed in 45-gallon (Imperial = 50 U. S. gallon) used drums, which are painted green and grey, and sold to wholesalers. All wholesaling is conducted on a cash basis. At the retail level the housewife is required to furnish her own container, generally bottles, for filling from the large drums.

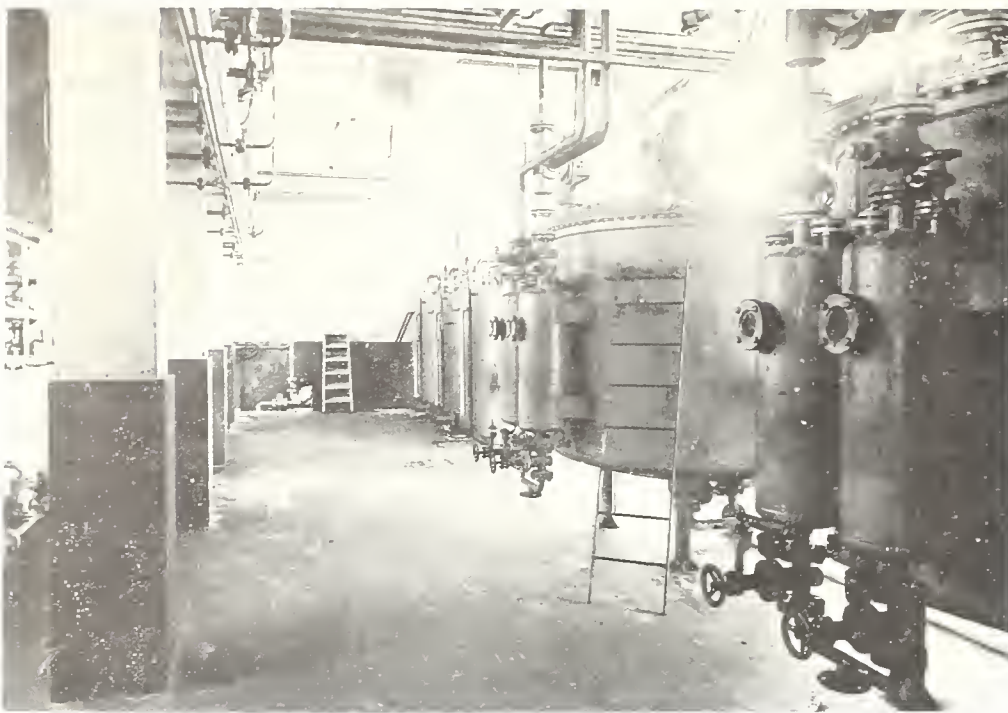
Malta imports for direct consumption shortening and margarine originating almost entirely from one factory in the United Kingdom. These products are marketed in one standard size of one-half pound. Italian olive oil is imported in tins of about one-half and 1-pound sizes and marketed as such.

Malta re-exports small quantities of fully refined, completely deodorized soybean oil to Libya and other countries.

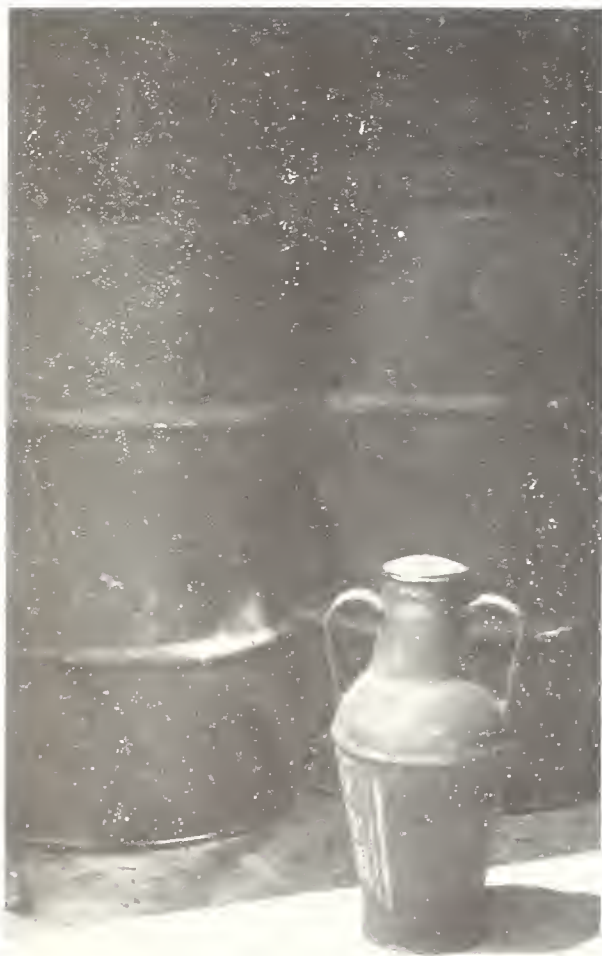
Transportation and Handling

Valletta, Malta, has bulk facilities capable of handling up to 700 tons of imported vegetable oil. The oil is pumped directly into tanks situated in a warehouse at the port terminal.

The oil is transferred by tank trucks from the dockside bulk tanks to the plant's storage units, with an estimated capacity of up to 100 tons. Consideration is being given for the expansion of tank storage capacity at the plant site of up to 400 tons.



Cooling units for the deodorizers of Malta's vegetable oil plant at Marsa. This plant refines crude degummed soybean oil, mostly from Western Europe.



Left, typical containers for vegetable oils in Malta. Here, fully refined soybean oil would be pumped from the large drum into the urn. Below, drums of soybean oil are being loaded onto a truck at the refinery. In Malta, wholesalers provide their own trucks and pick up their oil.



Livestock Economy

Sheep, pig, and goat numbers have declined significantly since 1950. Cattle numbers have increased, and poultry units appear to be increasing after an unsteady period which witnessed both a sharp increase and a subsequent decrease.

More detailed livestock data reveal important, encouraging factors for the further development of improved protein feeding. Income from livestock products accounts for over 65 percent of total farm income. Prices of livestock products have remained high, slaughter weight of cattle has more than doubled,^{11/} the government is actively engaged

Table 11.-- Malta: Livestock numbers, 1950-60

Year	Cattle	Sheep	Goats	Pigs	Poultry	Rabbits
1950	2,861	20,408	50,159	20,800	(^{1/})	(^{1/})
1951	7,045	21,943	47,559	19,154	(^{1/})	(^{1/})
1952	7,017	21,058	44,635	18,457	(^{1/})	(^{1/})
1953	8,695	18,299	37,115	20,733	(^{1/})	(^{1/})
1954	7,474	19,282	42,408	25,600	282,308	35,885
1955	6,935	18,990	44,765	12,611	371,942	57,685
1956	9,142	16,721	43,984	15,173	400,558	73,061
1957	9,727	14,818	39,337	13,298	328,822	59,693
1958	9,798	15,011	36,944	16,262	352,293	57,602
1959	9,536	14,265	35,871	14,795	327,738	53,604
1960	9,378	13,016	34,688	14,046	344,483	52,545

Ministry of Agriculture, Malta.

^{1/} Not available.

in a program to increase fluid milk consumption, and marketing profits for livestock raised on balanced rations appears very favorable. Milk yields in commercial herds numbering over 40 head, where balanced rations are common, average 40 percent above those in small herds of less than 10 cows feeding on grains, grasses, and such. Further, 95 percent of milk production is sold off the farm.

The livestock distribution of Malta appears to favor the use of commercial balanced feeds from imported protein meals. The main island of Malta with its excellent deep seaport of Valletta has a high portion of the livestock categories particularly well suited for balanced feeds, including 75 percent of the cattle, 80 percent of the swine, 65 percent of the poultry, and an even higher portion of the larger commercial layer farms. Nearly all large dairy herds are maintained on Malta proper.

^{11/} From 3.1 cwt. in 1948-49 to 4.4 cwt. in 1955 and 6.3 cwt. by 1958.

Malta imports a significant portion of its livestock, meat, and poultry products. Live cattle, sheep, and goats have been imported from other Mediterranean countries and Yugoslavia, and other countries where hoof-and-mouth disease is not a factor. Frozen meats—particularly beef, mutton and poultry—and bacon and ham, including canned products, are imported from the United Kingdom, Australia, New Zealand, the Irish Republic, Argentina, Denmark, Israel, the Netherlands, the United States, Italy, Hungary, and Poland. Mutton, goat, frozen poultry, ham, and sausage imports have increased sharply in recent years; the other major categories have declined. Egg imports from Australia and Israel are maintained at a high level.

The relatively high import requirements of Malta have encouraged expansion in domestic poultry and hog production. The government is determining the best suitable categories of livestock for further development and plays an active role in breed, feed, and management improvement.

Much of the current attention to improve Malta's self-sufficiency has been devoted to an increase in local egg production. Layers averaging only 80 eggs per year are common. Private poultry farms consisting of over 3,000 birds have recently gone into production and some units consisting of over 30,000 birds are in prospect for 1962. Broiler output is receiving little attention and no large enterprises are engaged in this activity.

Mixed Feed Industry

The recent added emphasis on increased egg and hog production and on minimum fat content in marketable milk has given impetus to better feeding methods. Commercial poultry farms and profitability-minded farmers are utilizing larger quantities of mixed and balanced feeds. Mixed-feed factories, entirely hammer mill operations, are being rapidly erected. At least three of Malta's mixed-feed plants prepare formula-type balanced-ration compound feeds. Average output varies between 3 and 7 tons daily, mash and pellets equivalents.

Observations indicate that the mixed-feed ration, for use on government farms, calls primarily for the following:

Type	Bran	Barley	Corn	Beans	Cottonseed Cake	Protein
Calves	x	x	x	x	x	A
Young bulls	x	x		x		
Cows ^{1/}	x	x	x	x	x	A
Pigs		x	x	x		A
Goats				x	x	
Rabbits	x	x	x	x		
Chicks, to 8 weeks	x ^{2/}	x	x			B
Layers	x ^{2/}	x	x	<u>3/</u>		A

^{1/} Production ration. ^{2/} Includes middlings. ^{3/} Includes pea meal.

A = Containing not less than 50% albuminoids and the requisite digestible nutrients, including trace elements and vitamins at the accepted scientific levels for the purpose of compounding feeding rations for livestock and poultry.

B = Containing not less than 40% albuminoids, not less than 12 milligrams per lb. of vitamin B₂, and 60 million International Units per ton of vitamin A not less than 5 milligrams per lb. of pantothenic acid and also other vitamins and trace elements for the purpose of compounding feeding rations for poultry breeding stock.

The only type of oilcake added directly to Maltese livestock rations is imported cottonseed cake. This cake of high oil content, above 5 percent, is high in fiber and low in protein, averaging an estimated 22 to 23 percent on a dry weight basis. The protein types identified as A and B are imported, highly fortified concentrates which appear to be heavily weighted with fish meal protein.

Balanced rations prepared at private mixed-feed plants contain soybean meal 44-percent protein, generally of Canadian origin, fish, meat, and bone meal. These balanced rations appear well designed, being low in fiber and ash and adequate in protein. Unfortunately, however, only a small portion of most farm-held livestock is receiving a well-balanced ration. Improvement in dairy cattle and poultry feeding is making the most significant strides.

There appears to be an imbalance in present rations resulting from the heavy use of cottonseed cake and fish meal and a shortage of added fat for poultry rations and soybean meal for poultry, rabbit, and dairy cattle rations. Domestic or imported tallow could be used to provide the desirable fat for poultry rations, and U. S., Italian, or Israel soybean meal of 44 percent protein would prove profitable if added to the general livestock and poultry rations.

Prices

The duty free import provision for selected livestock feeds enables an internal price structure closely paralleling world market prices. Average April 1962 wholesale prices for selected protein feeds were as follows (\$ per m/t, c.i.f. bagged, Valletta).

	Dol. per metric ton ^{1/}
Chickpeas	133
Horse beans	106
Cottonseed cake, 22%	63
Cottonseed, meal 47%	67
Soybean meal, 44%	100
Vitamealo ^{2/}	162

^{1/} C.i.f. bagged, Valletta.

^{2/} Protein compound imported from the United Kingdom.

Chickpeas and horsebeans are imported from nearby North African countries. The materials averaging 22-percent crude protein are important for their high starch content. Cottonseed cake, produced from undecorticated cottonseed, is imported from Lebanon and Syria. The cottonseed meal is imported from Izmir, Turkey, where pre-pressed cake is further processed by a benzine solvent. Vitamealo is a trade-marked feed compound originating in the United Kingdom. Soybean meal is available from the United States, Israel and Italy although presently not imported as such, but is a part of compound protein available for domestic feeding.

Trade Restrictions

Imports are subject to license which must be obtained by the importer from the local import controlling authorities in Malta. The issuance of an import license, however, assures the release of the necessary dollar exchange.

The customs tariff of Malta is two-column—preferential rates apply on most goods from British Commonwealth countries and general, or higher, rates apply on imports of such goods from all other countries. On a number of items, the preferential and general rates are identical.

In the case of imported goods chargeable with duty by weight, such duty is chargeable on the net weight unless otherwise specified in the tariff.

Table 12.--Maltese import duties

Article	Empire preferential tariff	General tariff
Oils, edible:		
Crude edible oil, other than olive oil, per hectoliter	\$0.34	\$0.34
Refined edible oil, other than olive oil, per hectoliter	\$4.69	\$4.69
	or 15 percent ad valorem, whichever is the highest	
Olive oil	\$0.34	\$0.34
Linseed oil	6 percent	20 percent

Tallow:

1. Tallow for soap making free of duty from all countries.
2. Tallow from UK for industrial purposes or for incorporation in locally-manufactured articles, free of duty.
3. Tallow for uses as in (2), but imported from foreign countries (not UK) is subject to 14% duty.
4. Tallow other than (1, 2, 3) is subject to 20% and 34% duty if imported from the preferential area and from other countries respectively.

Lard and lard substitutes. Duty free.

Margarine. Duty free.

Meal (meat, blood, bone, and fish) for feeding animals, cattle food, condiments, and poultry spices, cotton-seed cake, groundnut cake, linseed cake, palm kernel cake, soybean cake, feeding treacle and meal specially prepared for the feeding of cattle, draft animals, swine, and poultry. Duty free.

Taxes, Duties, Fees and Other Sources of Revenue of the Government of Malta, 1961.

Ad valorem duties are assessed on the basis of the seller's price as verified by the invoice, with the addition of the cost of transport, including insurance, necessary for the importation of the goods into Malta (i.e., the c.i.f. price).^{12/}

There are no customs surtaxes on imports.

No consular documents or fees are involved in shipping to Malta. Commercial invoices need not be visaed, and no special form of inventory is required.

^{12/} The basic monetary unit in use in Malta is the British pound sterling (£) equal to \$2.80 in U. S. currency at the official rate of exchange. The pound is divided into 20 shillings (s) exchanging at 14 cents to the shilling, and the shilling contains 12 pence (d) equivalent to about 1-1/6 cents to the penny.

APPENDIX

Jordan Vegetable Oil Industries Company

The Jordan Vegetable Oil Industries Company is located about one mile south of Nablus on the east side of the main Jerusalem/Nablus road. The plant originally established to process only olive oil has since 1961 engaged in the manufacture of ghee from imported palm oil. The oil arrives in bulk tankers of up to 400 tons and is discharged directly into tank trucks at the port of Aqaba. The oil is then trucked to the factory where it is stored in terminal facilities at the plant. A small amount of oil estimated at about 10% of production or about 400 tons per year is imported as hardened palm oil with a melting point of 50 to 52°C. In the ghee process, the hardened oil is blended with the liquid oil to produce a yellow colored ghee of 40 to 42°C.

The refining plant appears to be one of the cleanest, well run plants in this part or the Middle East. Technicians are generally of Dutch origin (most of the previously imported ghee to Jordan originated from Holland) and the plant had at least one U. S. trained manager. The equipment includes Rose Downes - Thomason and Sharpless all of U. K. manufacture. The deodorizer is an 18-ton-capacity unit, 6 tons per batch with a maximum temperature of 180°C. The Sharpless centrifugals, and there are five, are capable of handling a reported 20 tons per day. The refining is the Lurgi Caustic method of refining.

The 4,000 tons of ghee manufactured annually is presently produced exclusively from palm oils with a maximum FFA of 5%, and 1% moisture, may soon be manufactured in part from U. S. fancy bleachable tallow. The company is interested in price quotations CIF Aqaba for drum tallow to produce an animal ghee. In addition, an inquiry was made for the price of U. S. semi-refined Prime Bleachable Summer Yellow cottonseed oil to be imported in bulk for further refining and distribution as a liquid oil. This oil will need to be winterized.

The plant manufactures two types of ghee: Treasure brand which retails in Jerusalem at 550 fils (\$1.55) per 5 pound container (about 31.5¢ per pound) and Gazel brand which retails for 500 fils (\$1.40) per 5 pound contained (about 30¢ per pound) in the Jerusalem market. In country markets such as Nablus, the price may be as much as 10% lower.

The construction of tank storage facilities at Aqaba is currently contemplated. These facilities are expected to be completed by 1963.



Jordan's only oil refinery and shortening plant, at Nablus.

Mixed-Feed Manufacturers and Importers

Lebanon

SNY Societe Nationale Industrielle Com-
merciale & Financiere S.A.L.
P. O. Box 3145
Beirut
Tel. 260290 - 260291
Director: Mr. George Awad

Provinmi Middle East Co.
P. O. Box 2276
Beirut
Tel. 26071
Manager: Adib Samaha

Gorra Trading & Industrial Co. (SWIFT)
P. O. Box 5001
Beirut
Tel. 282667
Manager: George Gorra

Greenleaf Farm and Hatchery S.A.L.
(Purina)
P. O. Box 502
Beirut
Tel. 280161

Abraham Affayan Yesayan
Nahr - Jisr al-Jedid
Beirut

J. P. Sheridan (Middle East) Ltd.
Beshara Khoury Street
P. O. Box 648
Beirut
Tel. 224787 (New plant under study)
Manager: Mr. Emile Yanni

Philippe Andraos & Yusef Freiha
Rue Allenby
P. O. Box 1425
Tel. 232760 (New plant under study)

Boutros & Joseph Hakim
Boulevard
Zahle (New plant under study)

Malta

Malta Milling and Grain Handling Co.
Ltd. (Andrews)
88 Pinto Road, Marsa
Tel. 24968 (Mr. Chapelle)

St. George Flour Mills
11 Church Wharf, Marsa
Tel. 24144 (Mr. Peter Torregiani)

Foodstuffs Compound Co., Ltd. (Stamina)
5 Valletta Road, Luqa,
Tel. 36346

Gatt Bros. (Prima)
68, Our Lady of Sorrows Street,
Piete.
Tel. 21694

Cyprus

Provita Compound Fodders Company, Ltd.
P. O. Box 9, Tel. 2005
Limassol, Cyprus
Manager: Mr. Michael Theodossiou

S.O.P.A.Z.
The Compound Fodders Cooperative Pro-
ductive Union, Ltd.
Nicosia, Cyprus
Manager: Mr. Agastiniotis

Cyprus Compound Fodders Co., Ltd.
P.O. Box 119
Nicosia, Cyprus

Vegetable Oil and Oilseed Processing Plants

Lebanon

National Vegetable Oils Co.
Trablus Street
P. O. Box 84, Beirut
Tel. 239919 - 228554

"Dassam" National Fats & Oils Co.
Maarad Street
P. O. Box 320
Beirut
Tel. 220865
Manager: Sami Lahham

Farah al-Salti & Sons
The Eastern Oil & Soap Industries
Hazmiyeh, Beirut
Tel. 281046
Leading Partners: Anis al-Salti
Fadil al-Salti

The National Soap & Oils Co.
Shiyah
Beirut
Tel. 270508
Manager: Wilson Mukarzel

Jabre Oil Mills
Foche Street
Beirut
Tel. 227249
President: Abdul Chani Kassem
Ra'if Kassem (Son)

Nazem Ghandour & Abdul Ghani Kassem
Bahsas
Tripoli
Tel. 24764
Manager: Nazem Ghandour

Societe des Huiles & des Raffinages, S.A.
Rue de Port
Fattal's Building
Beirut
Tel. 230518
Partners: Kamel Kassem
Edward Kourany

Fouad Tamer & Sons
Riyad al-Solh Street
Pan American Building
Beirut
Tel. 228829
Manager: Fouad Tamer

Mohamed Omar Ghandour & Sons
Lazarist Building
Amir Bashir Street
Beirut
Tel. 283121
Main Office: Shiyah-Tayyuni
Manager: Rafiq Ghandour

Jordan

The Jordan Vegetable Oil Industries Co.
P. O. Box 95
Nablus, Jordan
Tel. 361
Technical Director: Abraham abdul Hadi

Malta

The Edible Oil Refining Co. Ltd.
72 Merchants Street, Valletta
Tel. 26747 (Plant)
Managers: Major A. J. Calascione and
Mr. A. Psaila

Cyprus

Hellenic Mining Co., Ltd.
P. O. Box 10,
Nicosia, Cyprus
Managing Director: P. L. Paschalides

